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ABSTRACT

This volume contains 10 papers, including studies, a literature review, and program descriptions, that are devoted to various aspects of business education and training. The following papers are included: "The Net Generation: What Are We Doing To Meet Their Learning and Training Needs" (Jacqueline J. Schmidt, Kathleen M. Hiemstra); "The Glass Ceiling Phenomenon: Issues and Implications for Educators and Trainers" (Virginia Sullivan); "English-Language Accent Preferences from within the British Business Community: Implications for Business Educators & Trainers" (James Calvert Scott, Diana J. Green, David D. Rosewarne); "The Role of Convenience in Students' Adoption of Telecommuting at Entry into the Workforce" (Ewuuk Lomo-David); "Team Learning in the Classroom: Try It Again (for the First Time)" (Matthew Valle); "Computer Workstation Assessment of Office Professionals" (Melody W. Alexander); "Teaching Teamwork: The Paper Airplane Contest" (Steve Dunphy, Michael Davids); "Developing Nontechnical Skills of Information Technology Professionals To Meet Industry Needs" (Janet L. Bailey, Robert B. Mitchell, Diane Parker); and "Critical Thinking and the Business Writing Competencies of Junior Accountants" (Douglas C. Smith, Sandra J. Nelson, Gloria Jean Smith, Susan M. Moncada). Most papers contain references. (MN)

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EDITOR'S NOTES . . .

Having served as editor of the Journal of Business and Training Education for the past ten years, it is time now that I step aside and pass the editorial mantle along. We are fortunate in that Dr. Betty Kleen of Nicholls State University in Thibodaux, LA has agreed to assume the editorial role. Betty has served the Journal with the highest competence in her role as associate editor. It is with complete confidence that I entrust the Journal to Betty. I encourage our professional community to support her, as they have supported me, by submitting manuscripts and volunteering to serve on the editorial review board.

In my term as editor I have had the distinct pleasure of working with numerous outstanding individuals who have contributed to the success of the Journal as a national refereed publication. I want to take this opportunity to thank the many authors who have submitted papers; their contribution is the lifeblood of a successful Journal. I particularly want to thank the editorial review board and the associate editor, Betty Kleen, who have donated so much of their professional time and effort in reviewing the many manuscripts received. I also want to acknowledge my gratitude to Sandra Cash of Louisiana State University for her patience in keying the Journal. Finally, I want to express my appreciation to our loyal advertisers for their support over the years.

The manuscripts presented in this issue were accepted under a blind review process. Each was read by three reviewers from the Journal's editorial review board. The Journal is listed in the Cabell's Directory of Publishing Opportunities in Management and Marketing and in the Cabell's Directory of Publishing Opportunities in Education. A description of these directories is provided, here within the Journal, along with information on how to order copies of the directories.

This issue of the Journal contains articles on a wide variety of timely topics, beginning with Jacqueline J. Schmidt and Kathleen M. Hiemstra's article on dealing with a new generation of learners called the Net Generation, who grew up in a digital age. This generation has been affected by the digital age in terms of the way they learn, communicate, entertain themselves, find information, create communities, share and even think. Schmidt and Hiemstra's study examined the Net Generation's self perception and preferences for learning, working, and methods of learning evaluation. The authors provide recommendations for teaching, training, and evaluating the Net Generation.

The presence of women as permanent members of the workforce has increased over the years, but advances have been met with obstacles. Virginia J. Sullivan's article provides an overview of the issues for women related to the glass ceiling. Three broad topic areas are explored: developmental issues, role expectations, and organizational culture. Dr. Sullivan discusses instructional implications for business educators as they prepare women for future careers.

The English language is considered the dominant business language around the world. However, English is spoken in many different accents. Knowing the preferred accent can assist businesspersons in the domestic and international setting. In the third article, James Calvert Scott, Diana J. Green, and David D. Rosewarne examined six preferred English-language accents within the British business community, a component of the second-largest native English-speaking community. Based on their findings, the authors offer teaching and curriculum suggestions for business educators and trainers.

Telecommuting, teleworking, and home office working are examples of a work trend that has assisted organizations in keeping costs down, elevating profits, and accommodating the various needs of a diverse worker population. Today, the survival of a telecommuter is dependent on the availability of up-to-date and reliable telecommunications equipment and the willingness to forego the social environment of the office. Ewuuk Lomo-David conducted a study that examined the factors that influenced graduating students' choices to accept or reject telecommuting as an alternative approach to work.

The findings of this survey and implications for teachers and trainers are provided in the fourth article.

When work tasks require multiple skills, experience, and judgement, work teams generally outperform individual members. The task of teaching effective group and team processes is a necessity for our youth as well as for those on the job. The focus of the article by Matthew Valle is on the processes and outcomes associated with a cooperative learning approach to teaching team processes. Even though cooperative learning approaches are not new to educators and trainers, Dr. Valle describes a team learning model that allows for the structuring of teams for high performance and for helping educators and their students to investigate the process of gains and losses associated with team-based activities.

In another article dealing with teaching teamwork, Steve Dunphy and Michael Davids describe a hands-on team learning project, the "paper airplane contest," to teach group dynamics and decision processes. In this exercise learners are required to process rather than delegate tasks, to make group decisions, and to see how their work is graded in the competitive market.

Even though technology has increased job productivity, it has come with a price. Workers suffer from a variety of injuries (carpal tunnel syndrome, eyestrain, and repetitive strain injuries) related to computer use. These types of physical problems are serious issues for businesses. Employers and employees are beginning to assesses the computer workstation in order to alleviate or prevent these problem. The results of a research study conducted to determine the computer assessment procedures used by office professionals is reported in the next article by Melody W. Alexander. Dr. Alexander recommends that secondary and postsecondary educators not only stress proper workstation habits, but they need to teach future employees the importance of assessing whether the workstation is ergonomically correct to fit individual needs.

In addition to technical skills, businesses are increasingly requiring nontechnical or "soft" skills (teamwork, communication, problem-solving, and self-initiative). In the next article, Janet L. Bailey, Robert B. Michell, and Diane Parker report on the findings of industry research regarding the desirability of nontechnical skills for employees in computer-based careers. The authors present teaching and assessment strategies for the development of these "soft" skills.

Critical thinking and communication skills are considered to be essential in today's workplace. In another article dealing with "soft" skills, Douglas C. Smith, Sandra J. Nelson, Gloria Jean Smith, and Susan M. Moncada report on their study of critical thinking requirements associated with business writing tasks of entry-level accountants. The authors suggest ways for structuring learning assignments to aid in the development of critical thinking and business writing skills.

Once again, I want to sincerely thank all who have helped to make this Journal possible.

Donna H. Redmann, Editor
1992-2001

JOURNAL PROFILE

Journal Description

The Journal of Business and Training Education is a national refereed publication published by the Louisiana Association of Business Educators. This refereed journal includes articles on various aspects of business and training education dealing with research, theory, trends and issues, curriculum, teaching methodology, technology, and personal/ professional development. Manuscripts are selected using a blind review process. Each issue contains approximately four to ten articles. All volumes of the Journal are available in the ERIC database.

Circulation/Readership

The readership is comprised of business teachers, administrators, supervisors, teacher educators, college and university students planning to become business teachers or trainers, and trainers in business & industry. The journal is distributed to all LABE members as part of membership dues and sent free of charge to the NABTE (National Association of Business Teacher Education) institutions throughout the country.

JOURNAL SUBSCRIPTION

Subscription is part of LABE membership dues. Subscription rates are $10 for both non-LABE members and for institutions/ libraries. For a subscription, please make your check payable to **LABE** and mail it to the new editor at the following address:

Dr. Betty A. Kleen, Editor
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CALL FOR PAPERS

The Louisiana Association of Business Educators invites business educators and trainers to contribute articles for publication in the Journal of Business and Training Education, a national refereed publication. Manuscripts should deal with topics of interest to educators (at both the secondary and post-secondary levels) and to trainers in business and industry. Submission of manuscripts dealing with practical topics are encouraged, as are research based or theoretical papers. Occasionally, invited authors' papers will be published. Book reviews are also accepted.

Manuscripts will be selected through a blind review process. Manuscripts should not have been published or be under current consideration for publication by another journal. **Five copies** of the manuscript, including a title page and a 50-100-word **abstract**, should be submitted to the editor. The manuscripts should range from 6 to 15 double-spaced typed pages of 12 pitch type-size, including tables and references. Manuscripts must be prepared using the style format in the Publication Manual of the American Psychological Association, Fifth Edition, 2001 (ISBN 1-55798-791-2). The **title page** is to include the title of the manuscript and the running header. The following information on each author needs to be included on the title page: full name, position title, place of employment, city, state, zip code, telephone numbers and e-mail address.

Mail Manuscripts to: Dr. Betty A. Kleen, Editor
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THE NET GENERATION: WHAT ARE WE DOING TO MEET THEIR LEARNING AND TRAINING NEEDS

Jacqueline J. Schmidt, Ph.D.
Kathleen M. Hiemstra, Ph.D.

Abstract

This study examines the preferences of the front end of the Net Generation as to how they perceive themselves, how they prefer to be taught/trained, how they like to work and be evaluated. The N-Geners surveyed perceive themselves as being loyal to a company or organization, having clear personal and professional goals, capable of processing lots of information and assertive. They desire flexible schedules, challenging and varied tasks, clear expectations for performance and recognition. They like discussion more than other teaching techniques but prefer working and being evaluated individually except in oral presentations. The article discusses the implications of the data as we prepare them for the workplace.

Educators and trainers continually strive to find the most effective and efficient ways to work with students and train employees. As has happened before, a new group is now

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Dr. Jacqueline J. Schmidt is a Professor in the Department of Communications at John Carroll University. Dr. Kathleen M. Hiemstra is an Assistant Professor in the Department of Management, Marketing, and Logistics at John Carroll University.

entering schools, colleges and universities as well as the workplace. They are the Net Generation or the N-Geners. To meet their needs, change in current teaching and training methodology will be necessary.

Don Tapscott, a leading researcher about the Net Generation, in his book, Growing Up Digital: The Rise of the Net Generation, identifies the Net Generation as those between the ages of 2 and 22 by the year 1999. It is estimated that there are nearly 80 million of them (Computerworld, 1998). The Net Generation follows a group called Generation X and comes with unique characteristics, needs and opinions. Trainers and teachers need to identify who they are, how they like to be taught, how they like to work and how they like to be evaluated. This is a first step in preparing to meet their educational needs in school and in the workplace.

Several assumptions about the Net Generation have been advanced. During an interview with Alf Nucifora of the *Washington Business Journal*, Tapscott described the Net Generation as the "first to come of age in the digital age, and this affects everything about the world around them, including the way they learn, communicate, entertain themselves, find information, create communities, share and even think" (1998, p 48). Jeffery Epstein in *The Futurist*, which summarized Tapscott's early work, characterized the N-Geners as wanting options, customization, the freedom to change their minds quickly, interactivity, and not dazzled by technology (1998).

Tapscott in the Digital Economy: Promise and Peril in the Age of Networked Intelligence contends that "the digital economy requires a far-reaching rethinking of education and more broadly, learning and the relationship between working, learning and daily life as a consumer" (1996, p 197). The global learning infrastructure and the future of higher education is also discussed in Blueprint to the Digital Economy edited by Don Tapscott, Alex Lowy and David Tiscoll. An article by Carol

Twigg and Muhail Miloff concludes that "the learning requirements of study as a whole are changing as is the demographic composition/the student population." (p 199)

In *Educational Leadership*, Tapscott outlines six general shifts in teaching and learning that need to occur. They include a shift from linear to hypermedia learning, from instruction to construction and discovery, from teacher-centered to learner-centered education, from absorbing material to learning how to navigate and how to learn, from school to lifelong learning, from one-size-fits-all to customized learning, from learning as torture to learning as fun and from the teacher as transmitter to the teacher as facilitator (1999).

There can be no doubt that, as the Net Generation enters and continues through our schools, colleges, universities and the workplace, how we teach and train them will have to change. It is clear that to meet the needs of this new student group, we have to understand them better and identify what they prefer in order to make teaching/training more effective for them.

Purpose

Little research about the Net Generation has been based on actual responses from N-Geners. Therefore, the current study sought to determine for the front end of the Net Generation:

1. how they perceive themselves,
2. how they prefer to be taught/trained,
3. how they like to work and
4. how they like to be evaluated.

Methodology

For this study, data were gathered from 438 traditional undergraduate students. They were surveyed during class in a required university-wide communications course at a medium sized mid-western university. Traditional undergraduate students include those who are 18 – 22 years of age. The respondents for this study were 18-19 (63.2%) and 20-22 (33.1%) and those over 22 included 3.6% of the respondents. Respondents were 55.3% freshman, 19.9% sophomores, 13.5% juniors and 11.2% seniors. They were evenly divided between male (n = 220) and female (n = 218) students. Using a Likert type scale, from 1 to 5, students were asked to respond to a series of questions about themselves and their preferences. The data were analyzed for frequency of response and are presented in percentages. Chi Squares were also used to determine if gender effected the choices made by the respondents. The requirements for Chi Square were satisfied.

Results

The results of this study for these front end Net Geners are presented in four areas: how they perceive themselves, how they like to be taught in the classroom, how they like to work, and how they prefer to be evaluated.

How The Net Generation Perceives Themselves

The Net Generation group surveyed have clear perceptions of themselves. They were asked to agree or disagree with a series of statements describing themselves as students using a Likert type scale with 1 being strongly disagree, 2 moderately disagree, 3 no opinion, 4 moderately agree and 5 being strongly agree.

The respondents choosing moderately agree (4) or strongly agree (5) describe themselves as comfortable with diversity (88.3%) and technology (75.1%), capable of processing a lot of information (76.7%) and believe they are assertive (71.5%). They feel they have clear personal goals (82%), clear professional goals (69.4%) a direction in life

(73.8%) and believe they are loyal to a company or organization (88.8%). Respondents also indicated a desire for challenging (78.3%) and varied (83.1%) tasks, flexible schedules (89.5%), clear directions (71.7%), clear expectations for performance (79.3%) and praise and recognition (74.9%) (See Table 1).

Table 1

How the Net Generation See Themselves as Students

	Moderately Agree	Strongly Agree
Comfortable with diversity	43.8%	44.5%
Loyal to company or organization	37.0%	51.8%
Flexible Schedules	36.3%	53.2%
Clear personal goals	38.4%	43.6%
Desire challenging tasks	53.9%	24.4%
Want varied tasks	52.3%	30.8%
Want clear expectations for performance	48.9%	30.4%
Capable of processing a lot of information	57.1%	19.6%
Comfortable with technology	45.9%	29.2%
Appreciate praise and recognition	45.7%	29.0%
Have direction in life	31.3%	42.5%
Are assertive	51.4%	20.1%
Have clear professional goals	36.8%	32.4%
Want clear directions	40.6%	31.1%

The Chi Square analysis for gender revealed significant differences. Men described themselves as more comfortable with technology (P = .001) than women. Women described themselves as preferring clear expectations for performance (P = .039) and clear directions (P= .001), appreciating praise and recognition (P = .0001), being loyal to the organization (P=

.025) and liking varied tasks (P = .00003) more than men. All significant differences were found in the strongly agree cells.

How The Net Generation Likes To Be Taught

The group surveyed also had distinct ideas about how they like to be taught. They were asked to evaluate a series of instructional techniques to be used in class using a Likert tvpe scale with 1 being never use, 2 rarely use, 3 sometimes use, 4 use often and 5 being use every class. Those responding to use often (4) or use every session (5) provided the following data.

Respondents chose discussion (66.3%) more than any other teaching method. The use of experiential exercises (48.4%) and role playing (45.4%) were chosen more than case studies (26.9%). While N-Geners perceived themselves as comfortable with technology, the majority of the respondents do not want instructors to use, on a regular basis, computer-based assignments, television instruction, or video or audiotapes. Those choosing use often (4) or use every class (5) were: (35.9%) computer assignments, (22.4%) television instruction, (34.2%) videotapes and (12.5%) audio-tapes.

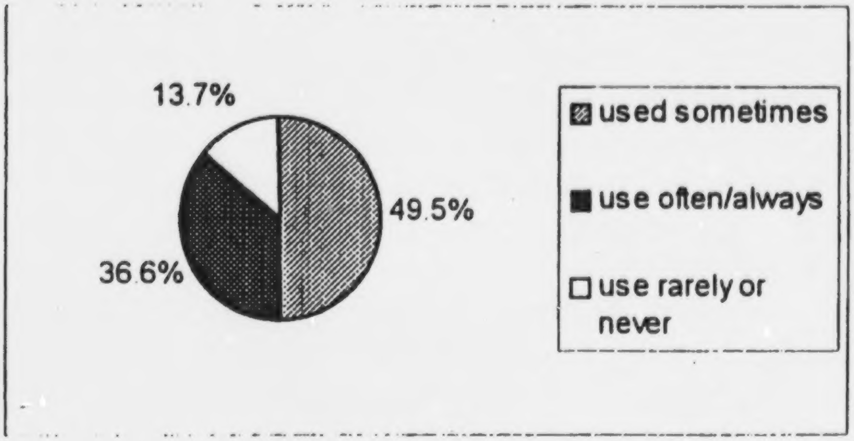
One of the most unusual findings was the large percentage of respondents choosing sometimes use (3) for almost all teaching methods other than discussion. The findings for sometimes use were: lectures (49.5%), small group (35.8%), case studies (43.4%), experiential exercises (35.2%), videos (46.3%), audio tapes (31.1%), computer-based (35.6%), role playing (35.6%) and television (33.8%).

The Chi Square analysis for gender found significant differences for women in the strongly agree cell for case study methods (P = .004) and for men in the strongly agree cell on the use of video (P = .008) and audio tapes (P = .003). No other gender differences were found.

The responses indicate that this group is ambiguous about the use of lecture as a method of instruction. Of those surveyed (36.6%) selected use often (4) or use every class (5) and 13.7% never use (1) or rarely use (2). The majority, 49.5% felt lectures should be used sometimes (See Figure 1).

Figure 1

Use of Lectures



The students were also asked a series of questions about what methods they like to have instructors use to supplement a lecture when one is given. While nearly two thirds of the respondents do not like lectures used often or every class, if lectures are given, 73.5% of the respondents want something to supplement the lecture. Of this group, 89.9% would like to have the lecture include examples. Some other supplements they like are the blackboard (63.3%), overheads (59.3%), personal course related stories (66.6%) and videos (40.6%).

Chi Square analysis revealed significant differences for gender in the strongly agree cell. Women liked personal course related stories (P = .016) more and men preferred video tapes more (P = .03).

How The Net Generation Likes To Work

The group surveyed has strong preferences for how they want to work. They were asked to respond to a series of choices to the question how do you like to work using a Likert type scale where 1 was strongly dislike, 2 moderately dislike, 3 no opinion, 4 moderately like and 5 strongly like. The Net Generation group responding moderately like (4) or strongly like (5) provided the following data. They show a preference for working individually (87.9%). If working in groups, they like small groups of 2 to 4 persons (74.2%) more than larger groups of 5 to 10 persons (17.3%). They report little or no preference for having either close supervision (39.8%) or little or no supervision (39.5%) when working (See Table 2).

Table 2

How the Net Generation Like To Work

	Moderately Like	Strongly Like
Prefer working individually	47.3%	40.6%
Small groups (2 – 4 persons)	55.9%	18.3%
Large groups (5 – 10 persons)	11.6%	5.7%
Close supervision when working	29.5%	10.3%
Little or no supervision when working	31.5%	8.0%

When asked a series of questions about what types of assignments they like, using the same Likert scale from above, those selecting moderately like (4) and strongly like (5) indicated that they like written reports (55.5%) more than oral reports (31.5%). Furthermore, they like to write individual written reports (67%) more than writing a group written report (39%), but they like group oral presentations (49.2%) more than individual presentations (38.4%) (See Table 3) .

Table 3

Types of Assignments

	Group		Individual	
	Moderately Like	Strongly Like	Moderately Like	Strongly Like
Written reports	20.1%	8.9%	47.0%	19.6%
Oral reports	35.6%	13.6%	27.2%	11.2%

Chi Square analysis for gender found that women liked individual written reports more in the moderately and strongly agree cells (P=.004) and disliked group writing more in the strongly and moderately disliked cells (P=.015) than men.

How The Net Generation Likes To Be Evaluated

This group has clear feelings about how they like to be evaluated. They were asked to respond to a series of choices to the question how do you like to be evaluated using a Likert scale from 1 being strongly dislike, 2 moderately dislike, 3 no opinion, 4 moderately like and 5 strongly like. Combining the moderately like (4) and strongly like (5) responses, the following results were found. In testing, they prefer take home exams (80.8%) more than any other method. When a test is to be used in class, they like matching (79.9%) and multiple choice test questions (72.8%) more than short answers (61.4%), essay (56.1%), true or false (49.3%) and fill in the blank questions (34.7%).

Significant differences for gender were found. Women more strongly and moderately dislike true/false (p= .0009) and more moderately and strongly like short answer (p= .0006) than men.

Other methods of evaluation they like include the use of classroom participation (68.3%) and homework assignments (62.8%). They like short papers of 2 to 5 pages (74%) more than longer papers of 5 to 15 pages (24.7%). In fact, they dislike long papers as those choosing strongly dislike and moderately dislike included 57.3% of the respondents. When asked if they like to be evaluated on oral presentations, 40% responded that they moderately or strongly like this evaluation, but 44.1% strongly or moderately dislike this evaluation (See Table 4) .

Table 4

How Net Generation Like to be Evaluated

	Moderately Like	Strongly Like
Tests – take home exams	26.5%	54.3%
Tests – matching	47.3%	32.6%
Tests – multiple choice	47.7%	25.1%
Classroom participation	34.7%	33.6%
Short page papers – (2 to 5)	53.9%	20.1%
Short answer questions	45.2%	16.2%
Homework assignments	41.8%	21.0%
Tests – essay	45.4%	10.7%
Oral presentations	31.1%	8.9%
Tests – true or false	36.3%	13.0%
Tests – fill in the blank	26.5%	8.2%
Longer papers (5-15 pages)	18.5%	6.2%

They were ambiguous about the use of peer evaluation. While 41% indicated a moderate to strong like for peer evaluation, 31% choose moderately or strongly dislike and 27.9% had no opinion.

Significant differences in gender were found on homework assignments and oral presentations. Women more strongly and moderately like (p= .04) homework assignments while men more strongly like (p= .003) oral presentations.

Recommendations for Teaching, Training and Evaluating the Net Generation

Based on the data that were gathered in this study, the following recommendations for teachers and trainers about how the Net Generation likes to be taught and trained can be made.

Use Discussion Methods, Experiential Exercises and Role-Plays

The Net Generation respondents in this study appear to prefer human interaction to interaction with machines in classroom learning. As the data indicate, they chose discussion more than any other method to be used most often in the classroom. Even though they feel they are comfortable with technology, computer based instruction, video and audio-tapes were chosen by most to be used only sometimes in class. This finding is consistent with those of Tapscott's on the groups' desire for interactivity and for the teacher to be a facilitator rather than a transmitter. Given these findings, to adapt to this groups' learning preference, instructors should present issues to the group and encourage discussion rather than use lecture.

Next to discussion, the Net Generation surveyed also chose experiential exercises and role plays to be used regularly in class. Both of these activities, like discussion, involve interaction and are also consistent with the desire for interactivity in that the students learn by doing rather than just seeing and hearing. Both of these methods can be used frequently in class to adapt to learning preferences.

Use Individual Assignments or Small Groups

Even though the Net Generation likes discussion in the classroom, the results of this study show they prefer working on their own when completing projects and assignments. If groups are used, they prefer small groups (2-4) rather than large groups (5-10). If written work is to be completed, they, especially women, like the assignment or project to be an individual assignment. The only difference in the preference for individual work was for oral presentations which N-Geners prefer giving in a group.

The preference for individual work runs against industry's growing use of group projects and work and is an area that teacher/trainers will need to develop. (Allen, 1998) Recognizing the N-Gener's negative reaction, instructors may want to initially break large groups into small groups for work sessions and then bring the groups back together for discussion or a wrap up session. In written assignments instructors might want to incorporate discussion and peer review to make this process more interactive.

Use Variety in Teaching Methods

While this Net Generation group likes discussion, experiential exercises and role-plays, they view most other teaching and training methods about the same. As survey results demonstrate, what they like is for a variety of teaching methods to be used as demonstrated by the number of the respondents choosing use sometimes on the survey for most methods. In describing themselves they indicated they also want varied tasks. Variety may help to maintain their interest and is reflective of their need for customization. As a result of this preference, teachers and trainers may want to try to use several different teaching methods during each class session and vary the methods used throughout the course.

Use Variety in Evaluation Methods

The respondents also like variety in testing and evaluation techniques. They indicate a preference for take home tests. They also like being evaluated on homework and class participation. Although men more than women like evaluation on oral presentations, N-Geners as a group dislike evaluation on oral presentations. All respondents dislike evaluation on long papers. They are ambivalent about the use of peer evaluation.

These preferences for the dislike of evaluation on oral and written projects run against current business practices. (Karr, 1998) Instructors will need to build skills in these areas. Since the group is largely ambivalent about peer evaluation, this technique might be used to increase discussion and interaction. In classroom settings, given the data, it may be helpful for this group to use a variety of techniques such as true and false, matching, multiple choice, fill in, short answer and essay questions when testing.

The variety of evaluation methods chosen by this group is consistent with Tapscott's on their need for customization and the freedom to change their minds as they work.

Use Examples and Supplements

The Net Generation group likes concrete rather than abstract learning. Nearly all surveyed indicated that they like examples to illustrate concepts and main points of a lecture. They, especially women, also like the use of course related personal stories during instruction.

This study also shows N-Geners want visuals when they are listening to a lecture. They appreciate visuals such as overheads, videos or the blackboard. These visuals not only help them focus on the material being discussed and improve retention of concepts, but also provide more stimulation and variety in the presentation. This finding relates to their need for change.

Give Clear Directions and Specific Expectations for Performance

This group perceives themselves as focused. They feel they have clear personal goals, clear professional goals and a direction in life. They want the same direction in their work. This group, especially women, want clear directions and expectations for performance. According to the data, clear expectations are more important to them than instructor supervision as they indicated no strong like or dislike for supervision. To adapt to their learning style, instructors may have to more clearly identify what needs to be done and how it will be evaluated for assignments or projects.

Conclusion

The Net Generation is presenting a new set of needs and challenges for teachers and trainers. As this study demonstrates, they have clear perceptions of themselves and their learning preferences. They desire interactivity in the classroom yet want to be evaluated individually. They want variety and customization in instruction and evaluation. They want clear directions and expectations for performance.

These preferences will cause the reexamination of methods of instruction and evaluation of teachers and trainers. However, while teachers and trainers need to be aware of learning preferences in order to adapt to this group, a word of caution is necessary. As mentioned earlier, many of this groups' preferences run against current workplace needs and practices. Prime examples of this conflict are their dislike for working in groups, writing group written reports, giving individual presentations, writing long reports and dealing with unclear instructions and expectations. These workplace needs cannot be ignored. Instructors will need to be aware of the groups' initial negative reaction to these assignments and projects in planning how to teach and develop these areas.

The challenge for teachers and trainers will be to provide a transition from how this group likes to learn and be evaluated to the workplace needs and expectations. The findings of this study can aid teachers and trainers in this process. By identifying how this group sees themselves and what they like about learning, working and being evaluated, teachers and trainers can use this information as they begin to adapt to and expand the groups' abilities to providing the transition to the workplace.

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The Glass Ceiling Phenomenon: Issues and Implications for Educators and Trainers

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Abstract

This article reviews the literature relating to the invisible barrier of the glass ceiling. Based on the overview, it discusses implications for educators and trainers involved in the preparation of women aspiring to management careers. Glass ceiling barriers are explored in the context of three broad but interrelated areas: development issues, role expectations, and organizational culture. From the ensuing discussion, three pedagogical strategies derived from diversity training are suggested to enhance students' awareness and career preparation: examination of attitudes and beliefs, role models and mentors, and a diverse teaching team.

However one may feel about the new millennium, it does seem to impel a stock taking of the present era. A relatively new phenomenon in current times is the presence of women as permanent members of the workforce. From a low 34% participation at the half-way point in the past century (Alpern, 1993), women's participation rate is projected to reach 48% by 2008 (Fullerton, 1999). Metaphors abound that

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underline anxieties about and attempts to adjust to this marked change in the very fabric of our society; for example, "latch-key kids," "commuter marriages," "token woman," the "mommy track," "superwoman" and the like.

This paper will discuss the metaphor, "glass ceiling." This term was originally coined to explain the scarcity of women in top corporate positions (Mainiero, 1994), a mere 2% of Fortune 500 companies by one account (Durfee, 2000). By extension, the term "glass box" has been used to describe the obstacles unique to women entrepreneurs (Belcourt, Burke, & Lee-Gosselin, 1990) and "glass walls" to warn women managers to avoid certain staff positions as dead-end "velvet ghettos" (Karsten, 1994). The terms "concrete ceiling" (Ray & Davis, 1988) or "multiple glass ceilings" (Betters-Reed & Moore, 1994) have been used to describe the double disadvantage experienced by women of colour, and "stained glass ceiling" to examine women's experience in church ministry (Purvis, 1995).

Others have looked at women's work in general (Albelda & Tilly, 1997), service organizations (Gibelman, 1998), the professions (Booth, 1999; McDowell, Singell & Ziliak, 1999), or the overall economy to discuss glass ceiling issues (Burbridge, 1994). Still others have examined the issue in relation to men (Atwater & Van Fleet, 1997). And a surprisingly large number of women have chosen to sidestep the restrictions of the corporate world by operating their own companies (Tyson, 1998).

Although Hennig and Jardim (1977) did not use the term "glass ceiling," they outlined the obstacles encountered by the first generation of women to reach top management positions by 1970. The 25 women in their survey climbed the corporate ladder without benefit of the women's movement nor equal opportunity, antidiscriminatory, or affirmative action legislation, all of which ameliorated women's advancement in organizations from the 60s onward. Since that work, women's historical progress as managers has been traced in the United States (Alpern, 1993) and in the United Kingdom, Europe, and Australia (Antal & Izraeli, 1993; Davidson & Cooper, 1992) to mention a few. More recently, systematic scrutiny has begun in the information technology field where executive-level women continue to be underrepresented (Baroudi & Igbaria, 1995; Igbaria, Parasuraman & Greenhaus, 1997). Invariably these writers allude to the "glass ceiling" as a catch phrase to denote invisible barriers to women's progress.

The purpose of this paper is to give an overview of the issues for women around the glass ceiling concept and to discuss instructional implications for business educators as they prepare women for future careers. Gleaned from their repeated reference in the literature, the overview is grouped under three main topics of development, role expectations, and cultural climate as they impact on women's progression within organizations.

Invisible Barriers

Glass ceiling issues are termed "invisible" precisely because they are not the overt obstacles that plagued women's entrance into the workforce during the first half of the 20th Century, i.e., sex-role expectations and structural, institutional and exclusionary practices and laws (Alpern, 1993). Rather they are more subtle, albeit very real, systemic or structural barriers that prevent women from advancing to upper or executive level management. These "invisible barriers" are discussed under three broad headings, although they are inextricably interrelated: developmental issues, role expectations, and organizational culture.

Developmental Issues

According to McDonald (1998), organizations may intentionally or unintentionally discriminate against women in their career development. Some developmental issues are placement in dead-end staff jobs; lack of access to mentors, to management training, to work assignments that develop critical skills, to overseas assignments; and promotion based on affirmative action. To break the glass ceiling, Barr (1996) indicated that women must have line-management experience in manufacturing, customer service, and sales, as well as diverse assignments that give them a broad base of experience and skill.

In actual fact, a deep disparity exists between the views of men and women corporate leaders about what prevents women's advancement. In Davies-Netzley's (1998) interview of 16 corporate men and women CEOs, the men felt that women's lack of necessary skills and know-how were the main barriers which would be resolved when more women possessed the requisite qualifications. However, the "pipeline theory" that says positions will open in the 21st Century when a critical mass of women have been in the system for a sufficient length of time is viewed with pessimism by many women (Karsten, 1994). The women in Davies-Netzley's (1998) review blamed gender discrimination in terms of male networks and peer similarities, factors that the men downplayed in importance. Likewise, Ragins, Townsend and Mattis' (1998) survey of Fortune 1000 CEOs confirmed that men identified lack of general management or line experience and insufficient time in the pipeline while women pointed to male stereotyping and preconceptions, exclusion from informal networks, and an inhospitable work environment as causes.

In a longitudinal investigation, Frankforter (1996) found that women were more successful in obtaining staff-oriented officer positions. He also found that women avoided gender-based screening more readily in younger and smaller firms. As an outcome of their analysis of the effect of gender on promotion decisions, Powell and Butterfield (1994) suggested a need for organizations not only to standardize procedures but also to publish established criteria for promotion in order to address perceptions of gender-related bias. In a more sweeping statement, Davidson and Cooper (1992) contended that organizations must readdress policies regarding recruitment, skill development, appraisal systems and training, and career development if women are to have a level playing field with men.

The female executives in Ragins, Townsend and Mattis' (1998) survey earmarked four strategies for advancement: consistently exceeding performance expectations, developing a leadership style that men are comfortable with, seeking difficult or high visibility assignments, and an influential mentor. Mentors, in particular, are crucial for women's advancement despite the potential barriers noted by Noe (1988), i.e., access to information networks, tokenism, stereotypes and attributions, socialization practices, norms about cross-sex relationships, and reliance on ineffective power bases. Of note, these mentors may be influential women as well as men. Ragins, Townsend and Mattis (1998) found that over half the women CEOs they interviewed mentored other women.

Role Expectations

Beyond the developmental issues previously mentioned, one must look at gender more specifically to get at the heart of the glass ceiling. Schwartz (1989) contended that the main gender issues relevant to organizations devolve around maternity and around differing traditions and expectations of men and women, both of which make it more costly to employ women than men.

Sadker and Sadker (1994) speculated that university women either "scale down" career goals for employment that will mesh with family demands, or they prepare for careers by delaying marriage in order to climb the slippery rungs of the "glass ladder." It seems that female managers are less likely to be married and to have children than male managers and that being married and having children impact differently on women than on men. While some men are willing to become full-time "househusbands" to further their wives' careers, they are not the norm (Greenfield, 1999). The dreams of the 80s that women could "have it all"—career, marriage and children—have been dampened by divorce figures, diminished career goals, and the twin stressors of guilt and burnout (Parasuraman & Greenhaus, 1993). As Albelda and Tilly (1997) stated: "After four decades of economic, political, and social changes, women are by no means equal partners with men in economic or family life" (p. 1). Although many of the women executives in Hennig and Jardim's (1977) survey were unmarried or had no children, this is a sacrifice that women today believe should not be required of them. The men interviewed by Davies-Netzley (1998) believed that family conflicts were a significant barrier to women and that single women without children were "better suited." While some of the women agreed, most felt that they could juggle work and family responsibilities, particularly with a supportive partner and organizational flexibility. However, Davidson and Cooper (1992) commented that, while organizations may give lip service to practices regarding relocation policies, career breaks, flexible working hours, and child care facilities, for the most part, they have not kept pace with today's demographic changes and demands.

Schwartz's (1989) solution that women should classify themselves as career-primary women or career-and-family women and that organizations should make allowances for both orientations has been criticized as being a disservice to both groups of women and as being a two-track system discriminatory to men and, thus, not a viable alternative (Karsten, 1994).

Organizational Culture

More difficult to analyze than development or role issues is the mix of culture, gender, race, and power issues in society and, by extension, in organizations. According to Gherardi (1995), these issues are much more complex in contemporary society than they were in traditional societies because of their pervasiveness, their elusiveness, and their ambiguity. Twenty-five years after Hennig and Jardim's (1977) findings, organizations still reflect the patriarchal system in which they are imbedded, the gender roles and expectations held by society, and the masculization or feminization of structures and of occupations. According to Betters-Reed and Moore (1995), this dilemma is further exacerbated for women of colour by the tendency to lump all women together as an homogeneous group. The female executives in Ragins, Townsend, and Mattis' (1998) investigation viewed "an exclusionary corporate culture" as the primary barrier to advancement. They felt that male managers were intimidated by women and had difficulty supervising or being supervised by women. Besides out-performing men, these women deliberately acquired a managerial style acceptable to men. They walk a thin line, evidenced by the fact that women who adopt male leadership styles not only find them dissatisfying but are actually penalized for them--the proverbial Catch 22 (Gibelman, 1998). Even less do such women serve as models for women of colour because they reinforce the dominant white culture (Betters-Reed & Moore, 1995).

The preceding sketch of issues that constitute a glass ceiling for women provides a context for a discussion of the educator's role in preparing women for management careers.

Educational Strategies to Counteract the Glass Ceiling Phenomenon

Workforce diversity will be the demographic reality of the 21st Century with women and minorities constituting more than 80% of the new entrants (Fullerton, 1999). In fact, "diversity management" is quickly becoming the latest focus, if not fad, for companies as they attempt to manage diverse change and conflict (Ettorre, 1995). Although diversity training is itself a controversial topic (Lynch, 1997), principles of diversity theory and diversity management, which encompass the human issues of "race, culture, age, gender, nationality, religion, sexual preference, social status, economic background and physical ability," (Bland, 2000, p. 45) suggest strategies for changing cultural norms and developing inclusivity in the workforce. As mentors, enablers, and change agents, both educators and trainers plainly have an important role to play in "shattering" the glass ceiling. Three critical strategies for educational institutions and organizations are discussed:

Examination of Attitudes and Beliefs

Attitudes and beliefs that men and women hold are key to implementing change. The essence of diversity management and training is the recognition and valuing of unique identities, perspectives, abilities and characteristics; it is the antithesis of assimilation into a uniform corporate culture (Bland, 2000). One of the stumbling blocks to change has been the continuing influence of a male-dominated educational and corporate hierarchy reflecting the dominant group's cultural belief and value system with unchallenged male models for success and gamesmanship. Lynch (1997) argues this is not a matter of dominance by white males so much as the cultures of capitalism and formal bureaucracy which "emphasize rationality, efficiency, goal-setting, careful measurement, impersonal rules and emotional control" (p. 34).

How can attitudes and belief systems be changed to value inclusivity? Teaching about the glass ceiling can be addressed in courses dealing with gender, leadership, managerial training and/or diversity issues, whether in Organizational Behaviour, Women in Management, or other such courses. Videos, readings, experiential activities and panels/discussion groups are avenues suggested by McDonald (1998) to sensitize prospective employers and employees to the reality of a pervasive glass ceiling phenomenon.

On the one hand, one of the problems educators may encounter is convincing educated (and inexperienced) young women and men who have grown up with working mothers in an era of equal opportunity rhetoric that gender inequities still exist (McDonald, 1998). On the other hand, Deal and Stevenson (1998) have found that negative stereotypes of female managers persist among male students raised in a time of equal opportunity. Race adds yet again another layer of complexity. Because students may have had little contact with diversity issues, Singelis (1998) believes that the objective of using exercises is to "provide the experientially based cognitive structure necessary to successfully integrate new material" (p. x). Methods such as orientation activities that include diversity education; topics or modules that focus on affirmative action, race, gender and the like; articles or journals used in small discussion groups; experiential activities using role-playing; men and women panellists from non-traditional occupations and women executives—all of these methods engender dialogue which actively involves the individual in learning new ways to view reality. It should be noted that the discussions that ensue may provoke strong emotional responses for the teacher and for the student. Spelman (1994) cautions educators to carefully consider how they will handle the emotional dynamics that arise, particularly the feelings on the part of white males of being under attack (Flynn, 1999).

Role Models and Mentors

The instructor serves both as a role model and a mentor in the classroom setting—a very demanding role indeed. As Bilimoria (1999) bluntly notes: ". . .management education is itself mired in the same gendered constructions prevalent in the larger corporate/business environment" (p. 120), and institutions must ". . .deliberately envision and strategize change within" (p. 121) if they are to provide the experience, learning and outcomes women need. As an example, Ragins, an expert in the area of diversity, mentoring and gender issues, left her faculty because it marginalized female professors, excluded them from decision-making and positions of power, and created a work climate causing a 60% turnover rate among the women—mirroring in academia women's experience in the corporate world (Sneider, 1999).

Sadker and Sadker (1994) believe that the fact that women constitute 53% of postsecondary students masks the reality that women and men may be channelled into different educations leading to different futures. From a high enrollment rate of women in the fields of business or management in the 80s, enrollments stalled in the 90s in the face of perceptions by women graduate students that institutions lack role models and mentors and that an MBA does not enhance career advancement (Bilimoria, 1999). While the importance of a strong mentor for women's success in moving up the corporate ladder is well established (Noe, 1988), cross-gender mentoring relationships are more prevalent than same gender mentoring. However, emerging information indicates that women may gain greater benefits from a same-gender mentoring relationship (Schweibert, Deck, Bradshaw, Scott, & Harper, 1999).

To be good role models and mentors, instructors must be able to address issues of racial/ethnic identity, explore similarities and differences, identify how cross-racial mentoring and networking occurs, facilitate open discussion of attitudes and behaviour, and use appropriate strategies for developing awareness of the glass ceiling as well as other diversity issues (Betters-Reed & Moore, 1995; Bilimoria, 1998). Schweibert et al. (1999) describe effective mentors as those willing to invest quality time, to show a sincere interest in the mentee, to be open to independent growth and development, to model competence and professionalism, and to create an environment that allows for exploration of feelings and is inclusive and accepting. Women mentors and models can help young women explore their career roles and identities.

Diverse Teaching Team

Being part of a diverse teaching team, i.e., a team composed of male and female colleagues representing different cultural backgrounds, can be a powerful way to manage the perception that a white male doesn't understand the problems of women and minorities or that a woman or minority has a personal agenda of white male bashing (Flynn, 1999; Fried, 1993). The emotional backlash around affirmative action, diversity management and reverse discrimination issues for men and women alike must be part of any dialogue purporting to change attitudes and beliefs. Pedagogically, a team which represents diversity may better ensure that educators/trainers have the requisite awareness of or knowledge about the differences between female and male students in terms of their experiences, ways of learning (Belenky, Clinchy, Goldberger & Tarule, 1986), developmental needs (Betters-Reed & Moore, 1995), leadership styles (Bass & Avolio, 1994) and other diversity issues (Bilimoria, 1999; Fried, 1993).

Emphasizing the role of educators as facilitators rather than experts and based on her experiences dealing with diversity, Lynn (1998) proposes creating an open, flexible classroom environment that encourages participation and teamwork by including student-centred discussions and requiring mutual course assignments that increase opportunities for interaction.

A diverse team of educators can participate in the evolving debate about what complementary male and female qualities will be needed for leadership in the new century (Bass & Avolio, 1994). A great deal has been written about the management style women should be encouraged to cultivate. Examples of qualities are the value of being tough as well as direct; performing against stereotype; being a motivated risk-taker; building alliances; having well-developed interpersonal, delegation and team building skills; coping with pressure; assertiveness and self-confidence (Davidson & Cooper, 1992; Karsten, 1994; Mainiero, 1994). Women leaders can acquire the listed qualities as readily as men, i.e., "fit" in; but men, of course, don't have to "perform against stereotype." The underlying assumption that masculine managerial styles are more suited for advancement up the corporate ladder and feminine characteristics are antithetical to leadership is for the most part a gender-based cultural norm arising from educational, organizational and societal institutions that have been male dominated—a view that educators must not perpetuate. Programs that train future business leaders in the importance of power, aggressiveness, dominance and networking may be problematic for women who perceive and construct all these values or traits in a different way (Kilduff & Mehra, 1996). According to Betters-Reed and Moore (1995), while assimilation with the dominant culture may work for some white women, it has not for the majority of minorities or for women of colour—another version of blaming the victim by making issues of race and gender the minority group's responsibility. Thus, not only must the consciousness of chief executive officers be raised if change is to occur (Ragins, Townsend, & Mattis, 1998), but also the consciousness of educators, trainers, and the men and women they instruct.

Conclusion

The progress that women have made into managerial ranks indicates that change is occurring, albeit slowly (Dalton & Kesner, 1993; Guyon, 1998; Thomas, 1999); however, minority women have not experienced the same progress (Betters-Reed & Moore, 1995). The continuing presence of a "glass ceiling," which exists to varying degrees according to race and ethnicity, emphasizes the tenacity of stereotypical perceptions and attitudes that result in hostile environments for women not only in organizations but also in educational institutions where educators wittingly or unwittingly reinforce cultural norms.

Women in the 50s and 60s came late to their careers and were passive in the path it took; women in the 70s and 80s heeded their advise and "gained business experience, earned MBAs in record numbers, planned their careers, found mentors, formed networks, and learned to be assertive" (Karsten, 1994, p. 13). The challenge of the women of the 90s and the 21st century is to destroy the glass ceiling, a vestige of a passing age. But they need not do it alone if educators assume their pivotal role as champions of women in their quest to remove this invisible barrier.

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English-Language Accent Preferences from Within the British Business Community: Implications for Business Educators and Trainers

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Abstract

English-language accent preferences were obtained via the well-accepted matched-guise technique from those enrolled in first-year study groups at a major United Kingdom business school. These prospective and practicing businesspersons pursuing bachelor's degrees ranked the six representative English-language accents in this order: Received Pronunciation English, first; General American English, second; Australian English, third; Estuary English, fourth; Indian English, fifth; and Japanese English, sixth. For the General American English accent guise, one statistically significant difference was found to be related to the frequency of communication with overseas business colleagues who spoke languages besides English. The semantic differential scale data varied by both English-language accent and by accent characteristic. Related implications for business educators and trainers are given.

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Astute businesspersons are wondering if some varieties of the English language, the dominant business language not only in the United Kingdom and the United States but also around the world (Colback & Maconochie, 1989), are more suitable for business purposes than other varieties. They know that people always judge others and their employing organizations based on the accents they use (Honey, 1989). They want to know which English-language accent(s) might give them a competitive advantage over those who use other accents (DeShields, Kara, & Kaynak, 1996). Such businesspersons realize that understanding better how accents are perceived could assist them in attaining more of the potential of the English language in domestic and international business settings (Scott, Green, Rosewarne, & Neal, 1999).

More specifically, these businesspersons want to know which English-language accents are most preferred within the British business community, a component of the second-largest native English-speaking community (Crystal, 1995). When this information is known, then business educators and trainers worldwide can provide more relevant and meaningful English-language accent-related instruction for not only the British business community but also for other business communities that interact with and/or compete against the British business community.

The goals of this study were to identify from prospective and practicing members within the British business community (a) their preference rank order for the representative English-language accents, (b) any demographics-related differences that were statistically significant at the .05 level, and (c) the related semantic differential scale response patterns for the representative English-language accents.

Literature Summary

A comprehensive literature search revealed no studies about the English-language accent preferences of British businesspersons, confirming a void in both the business- and linguistics-related literatures, although it did reveal studies of the accent-related perceptions of unrelated segments of British society (e.g., Giles, 1970; Rosewarne, 1990). Studies of the English-language accent preferences of prospective and practicing businesspersons in the Intermountain West region of the United States (Scott, Green, & Rosewarne, 1997; 1998) and in the Pacific Rim trading region (Scott et al., 1999) provided ranking, demographic influence, and semantic differential scale information for these groups.

Scholarly work primarily by linguisticians supported the use of the well-regarded matched-guise technique (e.g., Cargile, Giles, Ryan, & Bradac, 1994), suggested representative English-language accents to evaluate (e.g., Rosewarne, 1990), and identified possible demographic variables to explore (e.g., Scott et al., 1999). Very few accent-related studies included either multiple varieties of one language or native and nonnative speakers.

The existing literature confirmed the need for the study and guided the researchers as they started the investigation.

Research Methodology

Repeated recordings of an identical message that is culturally acceptable around the world and spoken in various accents by one highly skilled phonologist (language sound expert) constituted the studied matched guises or message recordings. The message was delivered in six representative English-language accents that incorporate indigenous (Received Pronunciation, General American, and Estuary Englishes), transplanted (Australian English), new (Indian English), and nonnative (Japanese English) varieties, all major types of English-language accents.

Received Pronunciation English is the regionally neutral, prestigious standard British accent popularly known as the Queen's English or BBC (British Broadcasting Corporation) English. General American English is the standard United States accent spoken outside of the northeastern and southern regions by well-educated natives of the United States. Estuary English is the increasingly popular British English accent phonetically intermediate between Received Pronunciation English and the regional speech types of London and southeastern England. Australian English is the accent that reflects the mainstream pronunciation of well-educated natives of Australia. Indian English is the accent that reflects the mainstream pronunciation of educated natives of India. Japanese English is the accent that reflects the pronunciation of learners of English in Japan. The Cambridge Encyclopedia of the English Language (Crystal, 1995) provides more information about these representative English-language accents.

All members of a validation panel of knowledgeable English speakers listened to and correctly identified the studied accent guises (recordings). This verified that the recordings were authentic representations of the accents they purported to represent.

To ensure that the labels on the semantic differential scales would be understandable to both nonnative and native English speakers, the labels on both ends of the accent-characteristic continua were derived from adjectival impressions provided by nonnative English speakers who listened to the accent guises but whose accent perceptions were not part of the study data. To provide more voice variety and to reduce the likelihood of respondents' realizing that the studied accent guises were recorded by one man, two other males created distractor accent guises that were like the studied accent guises but were not actually investigated. Variables related to age, voice pitch, speech speed, and emotional reactions of respondents to voice qualities were eliminated by having one phonologist record all studied accent guises. Variables related to physical appearance, paralinguistics, and physical context were eliminated by using recorded accent guises. The study and distractor accent guises were randomly sequenced on the master recording. A practice activity ensured that respondents knew how to mark their responses to the accent guises on semantic differential scales.

The data were gathered from members of two first-year bachelor's degree study groups at a major United Kingdom business school that enrolls a typical mix of native and nonnative English speakers who are prospective and practicing businesspersons. The 58 volunteers learned about the opportunity to participate, signed informed consent forms, provided demographic information, completed the practice activity, listened to the study and distractor accent guises, and recorded their perceptions on multiple seven-point semantic differential scales. The alpha for the semantic differential scales was .95, suggesting high reliability in the responses. Arithmetic and grand means, standard deviations, rank order, and multiple ANOVAs with related Tukey tests where appropriate were calculated.

Respondent Demographic Profile

The typical respondent was a 19-year-old or under native English-speaking Caucasian female who was pursuing a business studies/business administration bachelor's degree. She was not currently working because of significant government funding for university education in the United Kingdom. Although she had studied a foreign language, she was not fluent for business purposes in that language. She identified herself with Greater London and the surrounding counties. She had not traveled abroad for business purposes but had done so for personal purposes. This information closely matches what is known about first-year bachelor's degree students at the sampled and comparable United Kingdom business schools, suggesting that the volunteer sample is representative of the population from which it was drawn.

Research Findings and Interpretations

Research findings and interpretations are subdivided into sections about the rank order, demographics-related difference, and semantic differential scale patterns.

Rank Order Information

Table 1 shows how the respondents ranked the representative English-language accents, what the grand means and standard deviations were, and what the arithmetic mean scores were on each of the 14 semantic differential scales for each of the studied accent guises.

Table 1

Accent Preferences From Within the British Community

Rank	English-language accent	Grand mean	Standard deviation
1	Received Pronunciation	78.23	7.37
2	General American	75.77	11.09
3	Australian	67.89	9.99
4	Estuary	58.43	11.37
5	Indian	49.80	13.15
6	Japanese	40.84	10.56

(table continues)

English-language accent	Semantic differential scales					
	A	B	C	D	E	F
Received Pronunciation	4.22	4.02	4.69	5.83	5.67	5.71
General American	5.10	4.78	5.84	5.51	5.72	5.39
Australian	4.81	3.86	5.59	5.40	5.33	4.98
Estuary	2.34	2.19	3.93	4.81	4.93	4.48
Indian	3.95	2.93	4.54	4.33	4.84	4.14
Japanese	2.88	2.67	3.17	3.71	3.88	3.79

(table continues)

English-language accent	Semantic differential scales					
	G	H	I	J	K	L
Received Pronunciation	5.71	5.81	6.51	6.38	6.22	6.41
General American	5.31	5.03	6.02	5.57	5.57	5.62
Australian	4.97	4.59	5.05	4.66	4.86	4.81
Estuary	4.70	4.35	5.57	4.36	4.91	5.19
Indian	4.45	4.23	1.79	2.60	3.14	3.02
Japanese	3.83	3.91	1.52	2.07	2.57	2.09

(table continues)

English-language accent	Semantic differential scales	
	M	N
Received Pronunciation	5.78	5.12
General American	5.14	5.28
Australian	4.41	4.67
Estuary	3.71	2.57
Indian	2.95	3.14
Japanese	2.40	2.36

Note. A = Boring/Interesting scale; B = Unattractive/Attractive scale; C = Unfriendly/Friendly scale; D = Impolite/Polite scale; E = Uninformative/Informative scale; F = Incompetent/Competent scale; G = Inexperienced/Experienced scale; H = Unintelligent/Intelligent scale; I = Difficult to understand/Easy to understand scale; J = Not well-spoken/Well-spoken scale; K = Not precise/Precise scale; L = Bad English/Good English scale; M = Bad intonation/Good intonation scale; and N = An unpleasant voice/A pleasant voice scale.

Note. 1 = extremely (negative characteristic); 2 = rather (negative characteristic); 3 = somewhat (negative characteristic); 4 = neither (negative characteristic) nor (positive characteristic); 5 = somewhat (positive characteristic); 6 = rather (positive characteristic); and 7 = extremely (positive characteristic).

The respondents ranked the Received Pronunciation English accent guise slightly higher than the General American English accent guise, with the third indigenous English-language accent guise, the Estuary English one, trailing the transplanted English-language accent guise, the Australian English one, by about ten points. The new English-language accent guise, the Indian English one, finished ahead of the nonnative English-language accent guise, the Japanese English one, by about ten points. Overall, the rank order of the studied English-language accent guises was much like that found in the Scott et al.

(1997, 1998, 1999) Intermountain West and Pacific Rim studies, with very small differences between the first- and second-place accent guises and occasional differences between the fourth- and fifth-place accent guises. This suggests a degree of stability in perceptions of English-language accents across cultural groups and countries. In all of the cited studies, the respondents most preferred the dominant English-language accent of their current country of residence.

In spite of the growing popularity of Estuary English within both the British business community and British society (see Scott, 1995), the Estuary English accent guise was not perceived very favorably by the respondents. This calls into question its suitability for international business purposes now and perhaps domestic business purposes in the future. Since the respondents are from an age group strongly influenced by Estuary English, since they identify with the area where Estuary English originated and is firmly entrenched, and since the sampled business school is located in an area with considerable Estuary English influence, it would have not been surprising had the Estuary English accent guise been more favorably perceived. Perhaps the sampled and other British business school students come from more traditional, better educated, more affluent, and more upwardly mobile households where their peers, unlike most others in their age group, continue to cling to the Received Pronunciation English accent as a mark of and a means for preserving their social status. Following the example of their parents who likely used accents similar to Received Pronunciation English to advance within British society, these prospective and practicing businesspersons may represent a determined group of better educated and trained persons swimming against the tide of Estuary English within British society. It is possible that any Estuary English speakers among the respondents may have rated the Received Pronunciation English accent guise higher than their own accent guise.

As the respondents and their peers accept more responsibility and have more influence within the British business community, it is possible that the use of the downscale Estuary English accent will decline except for conducting business with members of British society who continue to use that accent. The Received Pronunciation English accent should continue to dominate within the British business community for international business purposes since in no known location outside of the United Kingdom has the Estuary English accent garnered even a modicum of acceptance. To function effectively in the highly competitive global business world, British businesspersons must speak an accent like Received Pronunciation English that is internationally more familiar, more easily understood, and more widely acceptable.

The ranking-related information may be useful to businesspersons as they select accents to facilitate domestic and international business. It may also be useful to business educators and trainers as they provide learners with comparative information about English-language accents.

Demographics-Related Difference Information

Only one statistically significant demographics-related difference was found using ANOVAs. Why the perceptions of respondents who sometimes communicated with overseas business colleagues who spoke languages besides English were higher to a statistically significant degree (F-ratio = 2.999, F probability = .039, and D.F. = 3, 52) than the perceptions of respondents who seldom communicated with overseas business colleagues who spoke languages besides English for the General American English accent is unknown and warrants future investigation.

The demographics-related difference information may be useful to businesspersons using the General American English accent since how frequently prospective and practicing British businesspersons communicate with overseas business colleagues who speak languages besides English appears to influence British businesspersons' perceptions about this important international accent standard that is also spoken by most United States businesspersons. Business educators and trainers will want to point out this phenomenon, which is not yet well understood, to those whom they instruct.

Semantic Differential Scale Pattern Information

The grand and arithmetic mean scores for the semantic differential scales for each of the studied English-language accent guises suggest that the respondents clearly differentiated among the studied representative accents not only overall but also in terms of each of the 14 component accent-characteristic scales. The response patterns for the Received Pronunciation English and General American English accent guises were similar overall, with the former rated slightly higher on 9 scales and the latter rated slightly higher on 5 scales. When compared to the Received Pronunciation English accent guise, on average the General American English accent guise was rated about .2 lower; the Australian English accent guise, about .7 lower; the Estuary English accent guise, about 1.4 lower; the Indian English accent guise, about 2.1 lower; and the Japanese English accent guise, about 2.7 lower. Generally speaking, the response patterns for the various accent characteristics for the representative English-language accents were similar to those found in the Scott et al. (1997, 1998, 1999) Intermountain West and Pacific Rim studies. This suggests a degree of stability in perceptions of English-language accent characteristics across cultures and countries.

The semantic differential scale-related information may be useful to businesspersons as they select the most effective English-language accents for oral communication purposes. They could select one of the two top-ranked accents to positively influence customers' perceptions, trying to match the characteristics of the selected accent with the desired positive product and/or service image. They could select one of the lower ranked accents to negatively influence customers' perceptions, trying to match the characteristics of the selected accent with the desired negative product and/or service image in comparative statements that disparage the products and/or services of competitors. Businesspersons must be careful to differentiate between oral communications for the domestic and the international marketplaces since accent preferences vary from location to location. When intangible factors play a crucial role as they often do in the marketing of services, it is essential that businesspersons tailor the choice of English-language accents to specific marketplaces. For general administrative and telemarketing purposes, the accents of employees are crucial since customers are apt to link those accents with their overall perceptions of the business.

The semantic differential scale-related information may be useful to businesspersons who promote products and services, especially marketers and advertisers, and to the business educators and trainers who instruct them. This information may also be useful to business educators and trainers as they provide information about how prospective and practicing British businesspersons can derive more potential from the English-language accents they use for business purposes.

Business Educators' and Trainers' Implications

The reported study provides implications for business educators and trainers in the United Kingdom and around the world.

Implications in the United Kingdom

Business educators and trainers in the United Kingdom should encourage native English speakers to use either Received

Pronunciation English or General American English as their spoken form for both business and personal purposes because of its high ranking domestically and internationally. They should also encourage nonnative English speakers to use one of these same two international English-language accent standards since with the possible exceptions of Canadian English, Australian English, and Irish English, one of these accents likely served as the pronunciation model when English was learned. They should help those who speak lower rated accents to modify their speech over time in the direction of one of the two international English-language accent standards because of the widespread intelligibility and acceptability of these accents domestically and internationally.

Business educators and trainers in the United Kingdom should serve as role models for those whom they instruct by using an accent that is close to one of the two international English-language accent standards. If this is not possible or practical, then they should use as many recorded instructional materials as they can that use Received Pronunciation English and/or General American English when developing the oral language skills of prospective and practicing British businesspersons. These educators and trainers should also expose learners to other English-language accents so learners develop sufficient receptive skills to ensure message comprehension in both the domestic and international marketplaces.

Business educators and trainers in the United Kingdom should provide prospective and practicing British businesspersons with detailed information about how such businesspersons perceive English-language accents for business purposes. In the process of doing this, it is likely that these educators and trainers will need to conduct additional research—probably with the assistance of linguisticians—relating to English-language accent preferences within the British business community.

Business educators and trainers in the United Kingdom should also make prospective and practicing British businesspersons aware of the English-language accent preferences within other business communities since British businesspersons must increasingly compete in the global business world. In the process of doing this, it is likely that these educators and trainers will need to conduct additional research—probably with the assistance of linguisticians and peers abroad—relating to English-language accent preferences within other business communities.

Implications in Other Countries

Business educators and trainers in the United States and elsewhere should make those whom they instruct aware of the perceptions of prospective and practicing British businesspersons about representative English-language accents for business purposes. Like their British peers, they should encourage those whom they instruct, whether native or nonnative English speakers, to use General American English or Received Pronunciation English or something close to one of the two international English-language accent standards as their spoken form for both business and personal purposes. They should also develop the oral language skills of learners in one of these accents, in part by serving as effective accent role models. Further, they should expose learners to other English-language accents so that learners develop sufficient receptive skills to ensure message comprehension in both the domestic and international marketplaces.

Business educators and trainers in the United States and elsewhere, like their British peers, should provide prospective and practicing businesspersons with detailed information about how members of various business communities, including the domestic and British ones, perceive English-language accents for business purposes. They, too, should conduct additional research—probably with the assistance of linguisticians and peers abroad--relating to English-language accent preferences within various business communities.

Business educators and trainers in the United States – perhaps with assistance from linguisticians and British peers – should explore why the General American English accent guise is perceived differently by prospective and practicing British businesspersons with different frequencies of communication with overseas business colleagues who speak languages besides English.

Research Recommendations

Additional research is needed about the English-language accent perceptions of prospective and practicing British businesspersons for business purposes. First, researchers should replicate the study within five to ten years to find out if the accent-related perceptions have changed since based on the work of Rosewarne (1990), accent preferences and rank order can change within that time frame. Data from a replication would also begin the process of tracking the evolution of English-language accent preferences within the British business community, contributing to a better understanding of the dynamics of change within an important business community.

Second, researchers should conduct a similar study in other English-speaking business communities such as those of current and former Commonwealth countries to increase understanding about perceptions of representative English-language accents for business purposes. Such a study could also be conducted in other major English-speaking regional marketplaces such as that of the European Union, whose forms of English are significantly influenced by those of the United Kingdom.

Third, researchers should try to find out why prospective and practicing British businesspersons perceive the

General American English accent guise differently depending on the frequency with which they communicate with overseas business colleagues who speak languages besides English, a matter uncovered but not resolved in the reported study.

Fourth, researchers should continue to explore the effects of using various English-language accents for business purposes in an effort to derive their full potential for business purposes, perhaps building on the work of others such as DeShields et al. (1996).

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THE ROLE OF CONVENIENCE IN STUDENTS' ADOPTION OF TELECOMMUTING AT ENTRY INTO THE WORKFORCE

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Abstract

This study reflects an examination of the perspective of graduating students regarding prospective employee in-transit concerns, convenience factors, and on-the-job issues in telecommuting. An important question posed by this study was "what factors would motivate graduating students (prospective employees) to adopt telecommuting?" The findings indicated that the motivating factors were: 1) avoidance of daily struggle with highway traffic, 2) reduced chances of being mugged on the way to and from work, 3) interest in staying at home to work and thus ward off daytime burglaries, 4) avoidance of direct contact with difficult coworkers, and 5) flexibility in work hours associated with telecommuting.

The overwhelming interest of organizations in keeping costs down and elevating profits, coupled with advances in technology, has led, in part, to what is called telecommuting,

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teleworking, or home office working. Telecommuting is a situation in which management, in concert with certain employees, accepts that certain aspects of a job or the entire job can be completed successfully at some working environment other than company location. In many instances, the company supplies computer and telecommunication equipment for transmission of information to and from corporate databases and to communicate with management. Hawkins, Romano and Rinfuss (1997) suggest the use of multifunction devices, (fax, copier, printer, and scanning combination) by telecommuters for data transmission. The use of multifunction devices has several advantages including lower cost, efficient use of space, use of less electrical power to operate, and job performance efficiency.

The current study explores the positions of graduating students (prospective employees) enrolled in Universities' Schools of Business classes regarding employee-related interests in telecommuting. These prospective telecommuters were college students, from a variety majors, preparing to enter the job market in the year 2000. They are probably better prepared as telecommuters than their predecessors because of experience with more recent state-of-the-art computing and telecommunication technology. The survival of a telecommuter today is very much dependent on the availability of up-to-date and reliable telecommunications equipment and willingness to forego the social environment of the corporate office.

Related Research

Research studies reveal cost effectiveness among several benefits of telecommuting for companies. Specifically, Spillman and Markham, (1997) report an increase in productivity and savings resulting from decrease in square footage of office space, and an increase in the number of available and capable workers to choose from who can telecommute. Wilke, Frolic, and Urwile (1994) concluded that telecommuting resulted in productivity enhancement, reduction in absenteeism, acceptance of the physically challenged individuals for employment, and an increase in morale among workers. McClay (1998) indicated that the implementation of telecommuting programs in some organizations resulted in advantages such as reduction of company expenses for office space.

A major cost that companies have to contend with is the cost associated with ownership and use of real property. Any reasonable economic strategy that reduces the cost of real property is generally welcome by companies. According to Banham (1996), the implementation of a telework program at IBM led to the elimination of some office spaces, which in turn saved the company almost $1.4 billion. Corporations, according to Prystash (1995), can use telecommuting programs as a public relations strategy to project a favorable image in society. Although many positive aspects exist, telecommuting does have disadvantages. Some of the disadvantages are that telecommuting may encourage companies to circumvent government requirements such as affirmative action laws and Clean Air Act and may also be used as a ploy to unfairly eliminate certain classes of workers by requiring these employees to telecommute against their will. When a corporation chooses telecommuting as opposed to the traditional commute to the office, the diversity or lack thereof among employees is not readily apparent. Telecommuting as an employee option can work in favor of affirmative action policies because some of the people who are traditionally discriminated against can now be employed. Telecommuting can enable companies to fulfill the requirements of the Clean Air Act because employees telecommute rather than drive their automobiles to work regularly and, therefore, do not contribute excessively to environmental pollution and degradation. Businesses are always employing different strategies to help them accomplish their economic goals.

Over the years, businesses have devised several methods to forestall competitive stagnation and increase efficiency. Some of the methods employed have included downsizing (the utilization of automation provided by information systems technology to trim down the size of a company's personnel), flextime (an arrangement between employer and employees by which work schedules are staggered), outsourcing (contracting certain functions such as selected applications development of an organization to another vendor who may successfully perform the function inexpensively), electronic data interchange (EDI) (network electronic exchange of standard business transaction forms between two organizations for purposes of competitive advantage), and business reengineering (elimination of waste by radically redesigning common and repetitive business processes for the purpose of maximizing profit). Telecommuting is one method of acquiring competitive edge that includes environmental friendliness, improvement of employment outlook, and compliance with certain government regulations.

Prescriptive Factors for Telecommuting Success

The start of a telecommuting program must be well planned and include consideration of the following prescriptive factors:

1) identification of jobs and job descriptions that will lend themselves to telecommuting,
2) identification of willing employees in job positions that are telecommutable,
3) identification of tangible and intangible benefits to the employees,
4) identification of tangible and intangible benefits to the employer,
5) identification of benefits to the environment,
6) identification of available resources to support the telecommuting program,
7) assurance that the supervisor of positions affected by telecommuting is willing to take the additional

responsibility to effectively supervise telecommuters,

8) assurance that the supervisor of the positions affected by telecommuting is capable of managing by setting objectives to ensure timely feedback on all actions and activities,
9) assurance that potential telecommuters have the aptitude and discipline to work alone effectively and efficiently in an unsupervised setting,
10) assurance that potential telecommuters have homes that lend themselves to the demands of telecommuting without unnecessarily creating additional burden on the telecommuters and their family or unnecessarily compromising company interests, and
11) assurance that security and safety standards will be met at the telecommuters' work sites.

Several companies today have embraced telecommuting. At the forefront of this interest are Hewlett-Packard, IBM, and AT&T (Spillman & Markham, 1997). As the number of corporations establishing telecommuting programs grow, so does the number of practicing telecommuters in the U.S. Opinions vary widely regarding the number of telecommuters presently in the U.S. According to McKeown (1993), about 29 million people were telecommuters in 1988 with about 21 million home-based businesses. In another study, Farrah and Dagen (1993) indicated that between 1990 and 1991, the number of telecommuters increased from 14.1 million to more than 16 million. They further projected that by the turn of the 20th century corporate America will have 25% of its workforce as telecommuters. If 25% of corporate America becomes telecommuters in the year 2005 and beyond there will be a substantial reduction in the volume of automobile-generated air-pollution across this nation. The environment will be substantially cleaner than envisioned when other environment-pollution factors are controlled further.

Khalifa and Etezadi (1997), in their study of employee beliefs regarding telecommuting, referenced the work of Greengard, which indicated that 72% of Fortune 500 companies in 1994 offered telecommuting programs. Telecommuting has become a way of life for many employees because of the benefits and apparent freedom that seem to encourage it. Stair and Reynolds (1998) noted that secretarial, sales, real estate, and programming positions are likely to lend themselves to telecommuting.

Telecommuting is particularly suited for situations in which employees want to balance their ability to be efficient parents with the stipulations and applicability of their job descriptions. It is also suited for individuals whose physical and mental attributes make it difficult to undertake the daily commuting to a central workplace. Harler (1997), an experienced telecommuter, indicated that workers with disability have the potential to benefit from telecommuting by having a job that allows them to work from home, which in turn saves companies some of the costs of in-depth compliance with the American Disabilities Act (ADA). The disabled workers must be skilled in some technical areas that allow them to work effectively from home.

In the new century, as telecommunication technology becomes more robust and reliable, and prices decrease, prospective telecommuters and employing corporations may find more compelling reasons to establish telecommuting programs. This proliferation of telecommuting acceptance in all works of life is expected to be most abundant in the 21st century.

Purpose of the Study

The purpose of this study was to determine the opinions and beliefs of graduating students (taking classes in the school of business) who are entering the workforce in the new millennium regarding employee-related convenience issues in telecommuting. Specifically, the study sought to determine the factors that influence graduating students' (prospective employees') choice to accept or not accept telecommuting as an alternative approach to work. Understanding of the issues regarding telecommuting from the perspective of graduating students (prospective employees) who will enter the job market at graduation, is essential for corporate management because of the current proliferation of telecommuting programs. Also, these graduating students may become the corporate leaders of the future and current opinions are important. This study will provide corporate management and trainers precise ideas concerning the issues that may affect telecommuting in this century. There is a lack of literature that focuses on graduating students' perspective on the issues of telecommuting and telecommuting growth in the new millennium. This current study will help management and corporate trainers look at the future of telecommuting in order to make better decisions regarding its impact on the corporation, employees, and the environment. Results from this study will provide educators the knowledge to better understand and grapple with students' interest in telecommuting and therefore provide appropriate guidance in teaching, career planning, and advisement.

Hypotheses Tested In This Study

The null hypotheses tested in this study are divided into three categories as follows:

A. In-Transit Hypotheses in Telecommuting

There is no significant relationship between graduating students' interest in telecommuting and the following employee in-transit factors: 1) avoidance of daily in-transit struggle with highway traffic, 2) avoidance of potential in-transit highway catastrophes, 3) avoidance of potential in-transit highway police arrests and [illegible] ns, 4) reduced chances of being mugged in-transit, and 5) reduced chances of one's car being carjacked in-transit.

B. Prospective Employee Convenience Hypotheses in Telecommuting

There is no significant relationship between interest in telecommuting after graduation and the following employee convenience factors: 1) potential of combining home-upkeep with job requirements, 2) freedom to pursuing personal interests at the expense of company time, 3) potential of saving money on childcare expenses, 4) possibility of work attire lasting longer, 5) possibility of spending less money on cologne/perfume, 6) possibility of eating home prepared food rather than fast food, 7) potential of saving money on gas, 8) possibility of reducing the chances of daytime burglary of one's residence, 9) possibility of using company equipment for personal interests, and 10) possibility of saving the time it takes to prepare for and unwind after work.

C. On-the-Job Hypotheses in Telecommuting

There is no significant relationship between interest in telecommuting after graduation and the following on-the-job factors: 1) potential increase in job satisfaction, 2) freedom to work alone undisturbed, 3) avoidance of direct contact with difficult bosses, 4) avoidance of direct contact with difficult workers, 5) flexibility in the work hours of a telecommuter, 6) lowering work-related stress, and 7) being able to control temperature at one's own work environment.

Methodology

Data for this study were gathered using a survey instrument. The population was national in scope and college-based.

Sampling

The population of this study comprised a random sample of 1,021 students registered in business classes in U.S. universities. To identify this sample 250 colleges and universities (37%) were randomly selected from a total of the 676 U.S.-based member academic institutions listed in the 1998-99 membership directory of the American Assembly of Collegiate Schools of Business (AACSB): The International Association for Management Education. The Web pages of these universities were consulted to identify the names, telephone numbers, and e-mail addresses of instructors in the schools of business. Three instructors were randomly selected from each of the 250 universities' colleges or schools of business. These instructors were sent an e-mail message requesting a response by indicating the number of questionnaires they can administer to their undergraduate students if willing to participate in this study. Seventy-five instructors who responded affirmatively were mailed 2,600 questionnaires based on the number each requested. A first class stamped return-addressed envelope was included in the package. Sixteen instructors administered the questionnaires to their students and returned them during the first round. Second and third e-mail reminders yielded 11 more responses. At final count, the 27 instructors yielded 1,098 questionnaires of which 1,021 were usable.

Instrumentation

The questionnaire for the study was developed based on the review of current research. A complete inventory of factors affecting telecommuters was made from the studies and from interaction with an experienced telecommuter. A Likert type of scale with three points (3 is "of great importance", (2 is "of little importance", and (1 is "of no importance" was used to determine the level of importance of selected statements attributed to employee-related issues in telecommuting in the new millennium. The questionnaire also included demographic information such as gender, academic classification, age, GPA, academic major, preferred industry of employment at graduation, race, and interest in telecommuting at graduation. The questionnaire was pretested on students enrolled in business classes and revisions made in accordance with suggestions.

Data Analysis And Results

The data in this study were analyzed using descriptive statistics and cross tabulations, and observation of the Chi-Square value and level of significance.

Demographic Information

A total of 563 (55%) respondents are female and 458 (45%) are male. Most of the respondents (72%) were business majors. Approximately 34% of the females and 20% of the males respectively prefer to work in the Finance/Insurance and Communication/Office Equipment industries after graduation. About 69% of respondents prefer to work in a city with a population of between 500,000 to 5 million. A large number of the respondents (48%) favored telecommuting over the traditional commute to the office. This finding is similar to Khalifa and Etezadi's (1997) findings that showed that 54% of employees were interested in telecommuting.

The variables in this study, collectively referred to as "prospective employee-related factors," were divided into three subcategories as follows: In-transit factors (Table 1); Convenience factors (Table 2); and On-the-Job factors (Table 3). The dependent variable (interest in becoming a telecommuter after graduation in the 21st century) was cross-tabulated with each of the independent variables under each subcategory to determine the presence or absence of a statistical significance.

In-Transit Factors in Telecommuting

A significant relationship was found between interest in becoming a telecommuter and avoidance of daily struggle with highway traffic (Chi-Square=22.926, p=.000). Therefore, graduating students (prospective employees) of this new century are likely to prefer telecommuting over traditional commute because they want to avoid daily struggle with highway traffic. A significant relationship exists between interest in becoming a telecommuter and fear of being mugged while in-transit to and from work (Chi-square=16.702, p=.000). The fear of being mugged in transit to and from work can encourage graduating students (prospective telecommuters) to use the telecommuting option to work and not the traditional commute.

Factors such as avoidance of potential highway catastrophes, avoidance of highway police arrests and citations, and reduction of chances of being in a car-jacking while in-transit were not found to have any significant correlation with interest in becoming a telecommuter (see Table 1). They were, however, when considered alone and on individual merit thought to be of some relevance by some of the respondents. Therefore, the aforementioned factors do not seem to absolutely influence the decision of graduating students to adopt telecommuting but are considered relevant factors with less potential to influence telecommuting decisions.

Table 1

Interrelationship of In-transit Factors with Interest in Becoming a Telecommuter in the 21st Century

Variable	Chi-Square	Probability
Avoidance of daily struggle with highway traffic	22.926	.000***
Avoidance of potential highway catastrophes	1.604	.448
Avoidance of highway police arrests and citations	5.242	.073
Reduced chances of being mugged in-transit	16.702	.000***
Reduced chances of being car jacked in-transit	1.386	.500

***$p \leq .000$

Employee Convenience Factors in Telecommuting

A significant relationship was found between "willingness to become a telecommuter" and "work attire lasting longer (Chi-Square = 7.754, p = .021)." This indicates that one of the reasons people telecommute is because they may spend less money on work attire since they may wear anything while working from their homes. The relationship between "eating home prepared food rather than fast food " and "interest in becoming a telecommuter in the 21st century" was found to be significant (Chi-Square = 8.856, p = .012). This finding indicates that people may prefer to telecommute because it provides the opportunity for them to eat home prepared food. There is a significant relationship between "saving money on gas" and "interest in becoming a telecommuter in this century" (Chi-square = 9.966, p = .031).

This significant relationship between saving money on gas and interest in telecommuting means that saving money on gas is a factor in the decision to become a telecommuter. A significant relationship exists between "reduction of chances of daytime burglary of one's home" and "interest in becoming a telecommuter in the next century" (Chi-square = 13.649, p = .001). This last significant relationship indicates that one of the reasons people may want to telecommute is because their presence at home during the day may possibly ward off potential home burglars. The following factors did not show a significant relationship with interest in telecommuting: potential to blend home upkeep with job requirements, freedom to pursue one's interests at the expense of company time, potential to save money on child care expenses, possibility of use of company equipment for personal interests, and potential to save the time it takes to prepare for and unwind after work (see Table 2).

On-the Job Related Factors in Telecommuting

The relationship between "potential increase in job satisfaction" and "interest in telecommuting" was significant (Chi-Square = 8.529, p = .014). "Freedom to work alone undisturbed" and "interest in telecommuting" also showed a significant relationship (9.992, p = .018). A significant relationship was found between "avoidance of direct contact with difficult coworkers" and "interest in becoming telecommuters (Chi-square = 7.628, p = .022). The next variable with significant relationship is "flexibility in work hours of a telecommuter" and "interest in becoming a telecommuter" (Chi-Square = 29.309, p = .000). In each of these cases, the significant relationship means that potential adoption of telecommuting by graduating students may be driven by the potential for on-the-job satisfaction, freedom to work alone

Table 2

Interrelationship of Employee-Convenience Factors with Interest in Becoming a Telecommuter in the 21" Century

Variable	Chi-Square	Probability
Potential to blend home-upkeep with job requirements	3.178	.204
Freedom to pursue your interests at the expense of company time	1.180	.554
Potential to save money on childcare expenses	3.936	.140
Potential for work attire to last longer	7.754	.021 *
Potential to spend less money on cologne/perfume	5.506	.064
Potential to eat home prepared foods rather than fast foods	8.856	.012*
Potential to save money on gas	9.966	.031*
Reduced chances of day time burglary of one's residence	13.649	.001**
Possibility of using of company equipment for personal interests	3.16	.210
Saving the time it takes to prepare for and unwind after work	.333	.864

*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

The variables that did not show a significant relationship are "avoidance of direct contact with difficult bosses," "lowering work-related stress," and "being able to control temperature at one's own work environment." (see Table 3).

Table 3

Interrelationship of On the Job-Related Factors with Interest in Becoming a Telecommuter in the 21" Century

Variable	Chi-Square	Probability
Potential increase in job satisfaction	8.529	.014*
Freedom to work alone undisturbed	9.992	.018*
Avoidance of direct contact with difficult bosses	1.639	.441
Avoidance of direct contact with difficulty workers	7.628	.022*
Flexibility in work hours of a telecommuter	29.309	.000***
Lowering work-related stress	.616	.735
Being able to control temperature at one's own work environment	1.937	.380

$^{*}p \leq .05$, $^{**}p \leq .01$, $^{***}p \leq .001$

Summary and Conclusion

Telecommuting generally tends to create the perception of less stress for employees when compared to the traditional commute to a central workplace. The annoyance associated with daily struggle with highway traffic is inconvenient enough to warrant employees entering the workforce in this century to consider telecommuting as an option to the daily commute to work. The increasing incident of mugging on the way to and from work may alert employees to consider telecommuting as an alternative mode of going to work.

In the interest of enjoying more cost effective life-style and improve quality of living, prospective employees would opt to telecommute rather than drive daily to a central workplace.

Reduction of the cost associated with work attire, possibility of avoiding fast foods, possibility of saving money on gas and the safety option of warding off daytime burglaries are factors that will increase the number of telecommuters in this new century.

Associated with the reduction of on-the-job anxiety, employees of this new century will telecommute because of the potential increase in job satisfaction, freedom to work in a setting without being disturbed by others, avoidance of direct contact with difficult workers and most importantly the flexibility associated with telecommuting. The three factors with the highest probability of endearing employees to consider telecommuting are avoidance of daily struggle with highway traffic, avoidance of chances of highway mugging and work flexibility associated with telecommuting.

Implications for Corporate Trainers and Managers

Trainers should be aware of the potential increase in the number of telecommuters in this century as a large number of graduating student have shown interest in telecommuting. Managers must be aware of the potential increase in the number of new personnel showing interest in telecommuting and therefore provide appropriate training for supervisors and trainers of telecommuters. Managers should also be made aware that a significant relationship found between "reduced chances of being mugged in transit" and interest in telecommuting is a good selling point when trying to convince employees to opt for telecommuting.

Implications for Teachers

Business teachers should be aware of the potential opportunities and convenience offered by telecommuting. They should explain to students that there are three basic concerns that form the categories of factors in making decisions regarding telecommuting. The first category is employee in-transit concerns, which indicates that telecommuting permits the avoidance of daily struggle with highway traffic and reduces chances of being mugged in-transit while going to and returning from work. The second is employee convenience factors, which indicates that telecommuting has the potential to extend the life of an employee work attire, has the potential to enable employee to eat home prepared food rather than fast foods, has the potential to help employees save money on gas, and has the potential to reduce the chances of day time burglary of employee home. The third category is employee on-the-job related factors, which includes potential increase in employee job satisfaction because employee has less to worry about, freedom to work with minimum disturbance because employee may prefer to work either at home or at a pilot center, avoidance of contact with difficult workers, and flexibility associated with the freedom to determine one's hours of work. These explanations will help students make decisions that are based on facts regarding telecommuting.

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TEAM LEARNING IN THE CLASSROOM: TRY IT AGAIN (FOR THE FIRST TIME)

Matthew Valle

Abstract

Given the growing reliance of many businesses on team-based organizational structures as a means for improving productivity, the effective teaching of team processes in business classes has become a necessity for business and training educators. This article describes one such approach - the Team Learning Model (Michaelsen, Watson, Cragin, & Fink, 1982). Data suggest that 332 management students in 65 student groups experienced positive affective and behavioral consequences as measured by end-of-course critiques and an analysis of exam scores.

There has been much research in the past twenty years (cf., Guzzo & Shea, 1992; Sundstrom, 1999) documenting the fact that work teams generally outperform individual members when the work tasks require multiple skills, experience and judgment (Kinlaw, 1991; Stevens & Campion, 1994;Tjosvold,

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Smith (1993) refer to as "the wisdom of teams". Business and training educators recognize the true wisdom of teams as nothing more than the effective selection of team members with a diversity of skills, experiences and abilities, the proper structuring of work tasks, and the development of reward systems which support high performance within the organization. The task of teaching effective group and team processes is a necessity for business educators; the selection of method, however, is a matter of choice.

This article reports on the processes and outcomes associated with a cooperative learning approach to teaching team processes. Cooperative learning (Cooper, Robinson, & McKinney, 1993) approaches are not new to educators. However, despite evidence from nearly 600 studies in the past 90 years documenting the superiority of cooperative learning over competitive and individual approaches (Johnson, Johnson, & Smith, 1991), the majority of educators continue to use traditional individual approaches (i.e., lecture-discussion) to teach a variety of subjects (Nilson, 1998), including effective team processes. This particular approach to teaching team processes may be something new for readers, or it may be vaguely familiar to others who may have read about or used the Team Learning Model in the past (Michaelsen, 1992; Michaelsen, Jones, & Watson, 1993; Michaelsen, Watson, Cragin, & Fink, 1982). In any case, this article is presented so that all educators may benefit by drawing upon team learning models that, first, demonstrate how to structure teams for high performance, and second, help educators and their students investigate the process gains (and losses) associated with team-based activities. This model (TLM) provides students with information, knowledge, power and rewards as the components of a high-involvement learning system so that learning outcomes may be enhanced (Lawler, 1992, Lengnick-Hall & Sanders, 1997).

Structuring Teams for High Performance in the Classroom

It is the intent of this article to focus more heavily on the investigation of process gains and losses associated with this approach to team learning (Michaelsen, 1992; Michaelsen, Jones, & Watson, 1993), since a description of how to structure the teams and classes is treated more comprehensively in other forums (see, for instance, Michaelsen, 1992; Michaelsen & Black, 1994; Michaelsen, Jones, & Watson, 1993; Michaelsen, Watson, & Black, 1989). In order to set the stage for the analysis and discussion of the results of the present study, however, it is necessary to provide background on the basics of classroom management and course content using this method.

The first class of each term or training module includes traditional initial class activities (e.g., class introduction, syllabus distribution, etc.), however, a considerable amount of the time is spent explaining the course content and procedures. Since most students have not experienced the Team Learning Model (Michaelsen, Watson, Cragin, & Fink, 1982), time must be spent explaining the sequence of activities and the purpose of the learning approach in which they will participate. There is no requirement for additional facilities to accommodate this team learning approach - all activities can be accomplished in a standard training classroom (although moveable chairs/tables are helpful). Students fill out information cards listing their academic majors (if the class is school-based), current job classification (if the class is industry-based), age ranges (ranges are used in place of exact ages in order to preclude offending individuals), prior work experience and additional "experiential" information during the first class. Student information is used to construct heterogeneous (e.g., diverse backgrounds, experiences, abilities, academic majors, etc.), permanent (e.g., team assignments for the entire term/course) learning teams of approximately 5-7 individuals (Michaelsen & Black, 1994; Michaelsen, Jones, & Watson, 1993). These teams meet and get acquainted in class period two. Starting with class period three, the learning teams are ready to begin the first block of instruction, and the first Instructional Activity Sequence (Michaelsen & Black, 1994).

The Team Learning Model (Michaelsen, Watson, Cragin, & Fink, 1982) uses six steps, called the Instructional Activity Sequence (Michaelsen & Black, 1994), as the tool by which students can gain more depth and breadth of knowledge. The six steps include: 1) an individual study step (reading and preparation outside of the classroom), 2) an individual test, 3) a group test, 4) distribution of test results and a test question appeal process, 5) instructor feedback following the test, and 6) substantial time for application-oriented activities (opportunities to further investigate course concepts and text material through discussions, role-plays, in-class exercises, etc.). Steps 2-6 occur during class time. Steps 2-5, which Michaelsen refers to as the Readiness Assurance Process (RAP), generally take between one and two hours to complete, leaving the bulk of the remaining class time in that block for Step 6 activities. This Instructional Activity Sequence (IAS) is repeated several times during the term, usually when a new block of material is presented (e.g., since academic texts usually contain 15-18 chapters of material, academic classes usually consist of 5 blocks of instruction, covering 3-4 text chapters per block).

Teaching (and Experiencing) Team Processes in Class

The essential difference between this sequence and other, more traditional, forms of classroom teaching is that the students are responsible for reading the course material and preparing for the tests prior to class (step #1). Class time is not devoted to "covering" text material; students read the chapters and come prepared for testing before any of the text material is discussed. The purpose of this "reverse" testing process (the tests come before the discussion of the material) is to emphasize the central role of individual performance and accountability as the foundation for effective team work. Without proper individual preparation (e.g., KSA's), the team may not be as effective as it could be.

At the beginning of the RAP, each student completes a short (twenty question) multiple-choice mini-test (Step #2). The test items are designed to test lower level cognitive skills (e.g., primarily knowledge and comprehension skills), based upon Bloom's (1956) taxonomy of learning objectives. Students are encouraged to read the text material with the objective of *understanding* the concepts discussed. Students are discouraged from trying to *memorize* the material. Memorization of such a large volume of material would be difficult and an inefficient use of study time. Once each of the members of the team has completed and turned in his/her individual tests, the team takes the exact same test (Step #3) and marks a separate answer sheet based upon their group discussions. During the team testing process, students are exposed to other information, ideas and arguments concerning the "best" answers to test questions. And they are exposed to peer teachers – others in their team who can demonstrate mastery of the course material and an ability to teach their fellow team members.

Step #4 of the RAP consists of the distribution of the graded tests and an appeal procedure. If the students should decide that a particular test question was unfair, they have the option of submitting a formal, written appeal. Appeals must follow the guidelines given to team members in their course information packets, and apply only to test questions missed by the teams. This keeps the appeals process manageable and increases team cohesiveness. The primary purpose of the appeals procedure, however, is to teach due process. Additionally, the appeals process serves as the focus of discussion if the course subject matter should cover the topics of equity and procedural justice (as most management classes do).

Step #5 involves a review of the entire test so that any items of difficulty or confusion may be cleared up before proceeding with the applications portion of the block (Step #6). Since the RAP or testing process takes approximately 60-90 minutes, substantial time remains in each block for applications activities. Applications activities (Step #6) may be structured to tap higher level cognitive skills (Bloom, 1956) such as analysis, synthesis and evaluation. Examples of applications activities include (but are not limited to): self-discovery exercises, case analyses, role-plays, team debate exercises, experiential exercises, and student skits.

Examining Team Processes

Education is essentially a service operation, and in the evaluation of service delivery two basic elements of customer satisfaction are essential to gauging operational effectiveness; satisfaction with the way in which the service was delivered and satisfaction with the results obtained as a consequence of using the service (Schneider & Bowen, 1995). Two general questions guided the present analysis; 1) are students satisfied with this particular approach to (educational) service delivery, and 2) is it possible to investigate meaningful "objective" measures of team process gains and losses using this method? The first question concerns student perceptions (e.g., satisfaction with the process and outcomes) of the efficacy of this learning system method, its conduct, content and contribution toward increased understanding of the material (Lengnick-Hall & Sanders, 1997). The second question concerns whether useful outcomes could be empirically defined and measured using traditional class outcomes (student grades). In this analysis, the students were treated as both customers and products of the (education) transformation process (Lengnick-Hall, 1996).

Method

Participants

The subjects of the present study were 332 undergraduate and graduate students (65 student teams) in management classes at a mid-sized public university in the Southeastern U.S. Data were collected over a period of 9 academic terms. The demographic composition of the classes mirrored the demographic make-up of the University student body [88% adult (22+) learners, 41% male, 59% female, 18% minority, average age of 26.1 yrs]. The curriculum consisted of required (e.g., Principles of Management, Organizational Theory) and elective (e.g., Organizational Behavior) management courses in the School of Business curriculum leading to the B.S.B.A., M.B.A., and M.S. in Human Resources.

Perceptual Outcome Measures. Several measures were used to gauge affective reactions/student perceptions of the efficacy of the Team Learning Model for producing positive learning outcomes. Three items from student end-of-course critiques measured student perceptions of course conduct ("The course was well-planned and organized"), course content ("The objectives and requirements were clearly explained"), and student understanding of the subject matter ("The assignments increased understanding of the subject matter"). The first two items are intended to measure student satisfaction with the learning process and the last item is intended to measure student satisfaction with results (Lengnick-Hall & Sanders, 1997). These items were measured on a five-point scale, with "1" the anchor for "Never", and "5" the anchor for "Always". In addition, some students provided voluntary written comments concerning course conduct, content and their general perceptions regarding the course in an optional comment block contained on their end-of-course critiques.

Team Process Outcome Measures. Comparisons of individual student test performance (# correct out of 100 possible points) and team test performance (# correct out of 100 possible points) were used to assess the relative effectiveness of the team processes. Two items from the individual and team test scores were compared; an average individual score (the sum of the overall individual test performance scores within a group divided by the number of individuals in the group) was compared to the overall team score, and the top-scoring individual's overall score from each group was compared to the overall team score for that group. Paired sample, one-tailed t-tests were used to measure whether team scores were significantly different (greater) than the average individual test scores achieved in each group.

Results

Student qualitative perceptions of course conduct, content and their overall perceptions regarding their understanding of the course material are contained within Table 1. This table lists the survey items analyzed using an overall sample (N = 332) mean and standard deviation for the items.

Table 1

Student Perceptual Course Assessments (N = 332)

	Mean	Std. Dev.
1. The course was well planned and organized.	4.79	0.095
2. The objectives and requirements were clearly explained.	4.75	0.131
3. The assignments increased understanding of the subject matter.	4.65	0.098

"1" = Never, "5" = Always

As can be seen in Table 1, the average scores for each of the survey items which measure student perceptions of the conduct and content of the course, as well as the general value of the assignments for increasing understanding of the subject matter, are quite high. The positive nature of these indicators of student satisfaction are corroborated by the unsolicited written comments provided by the students. A content analysis of the student written comments indicates that many of the students (40 out of 43 comments provided, or 93%) perceive this method of instruction to be effective and highly satisfying. Examples of their comments include; "...(instructor's) teaching methods encouraged participation and produced an environment which optimized learning," and, "Terrific class, content.... Class activities made learning fun and real. Combination of competitive nature and need for cooperation gave a definite real world feel to the whole experience". However, three of the forty-three comments (7%) provided by students were not complimentary. These students were forceful in their dislike of the method of instruction; "We had to read, then take the test. I learn better if it is explained beforehand. If I receive a low grade for the course, this will be the reason," and "Instructor needs to lecture on material before exams. Lectures were practically non-existent."

Paired sample, one-tailed t-tests were performed to compare the average individual score in each group with the overall group score on the tests. Results from these tests indicate that in every case, team performance was significantly greater than average individual performance ($p<.05$). In addition, the score of the individual with the highest score on the tests was compared to the overall group score (Michaelsen, Watson, & Black, 1989). Fifty-seven of the sixty-five groups (88%) outscored their top individual test taker by at least one point. Five of the sixty-five student groups (7.5%) scored as well as their top individual test taker, and three of the sixty-five student groups (4.5%) scored lower than their top individual test taker (by 1, 1, and 2 points, respectively). The average difference score for the entire sample (N=332) was a positive 4.92 points (s.d. = 1.65).

Discussion

Excellence in education, in general, and business education, in particular, are the result of the creation of effective learning systems (Christensen, Garvin, & Sweet, 1991). High quality business education should consist of a program which emphasizes 1) high levels of learning (e.g., increased knowledge, skill, and understanding), 2) the application of the newly learned material to specific in-class exercises, and 3) highly positive reactions (satisfaction) for the students (Lengnick-Hall & Sanders, 1997: 1335).

There are many lessons about effective team processes which can be taught by referencing the content and conduct of team learning classes. As with other cooperative learning approaches, students take an active role in team learning classes, acting as "co-producers" of learning outcomes (Lengnick-Hall & Sanders, 1997). Karl Smith (1994) commented in his video presentation on cooperation in the classroom that "...the real challenge in teaching is not covering the material for the students; it's uncovering the material with the students". Roles shift from expert/authority figure to facilitator/coach (instructor), and from passive listener to active participant in the learning process (student). Effective co-production requires task clarity, worker ability and motivation (Bowen, 1986; Lengnick-Hall & Sanders, 1997). Task clarity is enhanced by providing students with clear and detailed descriptions of course activities and their responsibilities for course completion. Worker (student) abilities can be enhanced through immediate and direct feedback (the multiple choice tests are graded immediately and results returned during the appeal and feedback portions of the RAP). Motivation comes from having knowledge of results and substantial autonomy to direct group activities in the student teams.

The group testing process provides students with their first opportunity to engage actively in the learning process. At this point (Step #3), the students have completed outside study and have taken their individual test based upon their prior study of the material. The traditional lecture/discussion format uses testing as a final check on learning for that block of instruction. The TLM testing process uses the mini-tests as a means to an end. As the name implies, the RAP (Readiness Assurance Process) uses the tests as a means to prepare students for additional, higher level learning (i.e., the tests assure *readiness* for additional study and application in in-class activities).

The group testing process provides opportunities for students to present their views concerning the test questions, argue for their choices, assess the logic associated with other team members choices, and ultimately assist in making a decision as to which answer the team will choose for the various test questions. The team testing process allows practice in the use of important team task and maintenance skills such as gathering and evaluating data, communicating in teams, conflict resolution and negotiation, and decision-making. Students learn dramatically and visibly about the synergistic effects of group interaction (team process gains), and they experience first-hand a few of the negative consequences associated with team processes (e.g., social loafing, a team process loss). Synergy (positive, neutral and negative) can be demonstrated by analyzing and comparing the individual and team performance scores on the tests. For example, in this investigation, eighty-eight percent (88%) of the teams outscored their top individual test taker (positive synergy). Seven-point-five percent (7.5%) of the teams scored as well as their top test taker (neutral synergy), and four-point-five percent (4.5%) of the teams scored lower than their top test taker (negative synergy). In all cases, the teams outperformed (outscored) the team individual test score average (group final test score total > team average individual final test score).

Social loafing is discouraged because the testing process (and individual contributions to testing and team outcomes) is open and visible. Students also learn that they are accountable for their preparation (or lack thereof). The team learning process includes an opportunity for students to provide peer grade input via an end-of-course peer performance evaluation (Michaelsen, 1992; Michaelsen & Black, 1994; Michaelsen, Jones, & Watson, 1993; Michaelsen, Watson, & Black, 1989).

There are other, more subtle benefits which may result from team learning. Student teaching is possible in the teams, since testing and most in-class activities occur without direct instructor contact. Student teachers may enhance the learning of their fellow team members by providing opportunities for a more detailed explanation of concepts – such discussions may not occur in a traditional classroom environment. As such, these peer teachers are gaining valuable leadership experience and team process facilitation skills. Additionally, student teams may provide at-risk or poorly performing students with social support and opportunities for exploring deficiencies in a non-threatening environment. These students may learn a good deal more in such an environment, more so perhaps than that which they would pick up during their individual study alone.

In addition to the periodic testing, students engaged in team learning usually complete a comprehensive exercise or group case analysis as part of their evaluation (Michaelsen, 1992; Michaelsen & Black, 1994; Michaelsen, Jones, & Watson, 1993; Michaelsen, Watson, & Black, 1989). This exercise provides the students with the opportunity to enact leadership within the groups as they plan, organize and produce the final group project. In management classes, for instance, such an exercise allows the students to engage in an analysis of a life-like management case scenario. A comprehensive case analysis or group project provides the students with another opportunity to apply what they have learned in the testing, or readiness assurance, process. Students must successfully synthesize and analyze abstract information (higher level cognitive skills) in order to formulate an effective intervention for the case company. These comprehensive exercises give the students the opportunity to refine their conceptual skills. The groups serve as a learning laboratory - the students must learn how to plan, organize, lead and control team processes so that the work is done on time and with high quality. Interpersonal skills (e.g., communicating, negotiating, conflict management) are refined, as well.

Over time, a number of interesting effects result from the team member's increasing knowledge of the course material and the individual ability of their fellow teammates. Some team members come to be relied upon more often in group discussions, and some less often. Positive pressure is exerted on the low scoring members to prepare more diligently, and the high scoring members realize their responsibilities and duties as (perhaps) the most knowledgeable team member. The teams constantly evaluate and re-evaluate their decision-making processes, and adjust as necessary in order to enhance productivity (score higher on the next block test). The level of student involvement is necessarily increased over that which would occur in a traditional lecture format class. The teams may develop and enforce norms of behavior. While some groups remain as groups, other groups transform themselves into high performing teams. The lessons of effective (and ineffective) group processes become apparent to everyone in class. In short, cooperative learning approaches, such as team learning, provide numerous opportunities for immediate application within the classroom environment.

This investigation was not intended as a standard empirical investigation of a significant new pedagogical approach. This investigation was intended primarily to investigate the general efficacy of the team learning model and to replicate previous findings (e.g., Lengnick-Hall & Sanders, 1997; Michaelsen, Watson, & Black, 1989). The data collected from the student end-of-course critiques is descriptive. The researcher did not have access to individual responses to student end-of-course evaluations (such would have compromised the confidentiality of the instruments and could have biased the results). Therefore, no causal relationships have been posited between antecedents and consequences (of using the team learning model). Nevertheless, the perceptual data are useful as a general indicator of the efficacy of the method. A comparative approach was not employed, because it would have required the researcher to match student samples and then apply two competing models of pedagogy to test relative differences. Comparative research such as that has already been extensively performed (cf., Johnson, Johnson, & Smith, 1991). The analysis of test score differences between aggregated individuals and teams replicates previous research findings (cf., Michaelsen, Watson & Black, 1989).

The team learning approach mirrors the same fundamental notions of team process development and execution as is contained in leading texts. The team learning method provides students with a "hands-on" learning laboratory. The students witness firsthand the reactions and consequences associated with different experiments in behavior. And perhaps of equal interest from a pedagogical perspective, student and teacher roles shift from that of passive receiver/dispenser of the information, to co-producers of educational outcomes. The team learning classroom operates like an organization, with sometimes competing, sometimes cooperating groups.

While this investigation and its conclusions are neither new, nor novel, nor earth-shattering, a nagging question remains: why do the vast majority of business and training educators continue to employ individual approaches (e.g., the traditional lecture-discussion format) to teach team processes? To be sure, there is no "one best way" to approach business education. Each professional is free to explore methods and choose an approach which fits his/her personality, teaching preferences, and educational environment. New business and training educators have a duty to explore the advantages and disadvantages of the wide range of pedagogical styles and methods. We are continually encouraged to seek out new examples and applications, and find the approach that is right for each one of us. Team learning is just one such approach. If you are a practiced professional, or one who knows about but does not use a cooperative learning approach such as team learning in your classroom or training environment, perhaps this article has given you food for thought and encouraged you to try team learning again (for the first time).

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COMPUTER WORKSTATION ASSESSMENT OF OFFICE PROFESSIONALS

Melody W. Alexander

The purpose of this research was to document how office professionals are assessing their computer workstations. A total of 392 office professionals completed a questionnaire, which included respondent and company information, computer use information, professional computer workstation assessments, implementation of safety features, and follow-up evaluations. Findings reveal that less than twenty-five percent of office professionals had a professional assessment of their workstation, which leads to some important implications for secondary and postsecondary office educators, as well as trainers.

Advances in technology have resulted in increased computer use in the work place. According to the 1997 census report, 63.9 million people use computers in their place of employment (Computer Use in the United States, 1999). Side effects of computer use include carpal tunnel syndrome, musculoskeletal, and repetitive strain injuries. These injuries (Andreasen, 1995; Sanders, 1998; have been linked to

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increased computer use in companies throughout the United States (Campbell, 1999; Sanders, 1998; Scheurermann, Scheurermann & Zhiwei, 1998). Vision difficulties from increased computer use such as eyestrain, blurred vision, and increased eye sensitivity have also risen Scheurermann et al., 1998). Around 650,000 workers yearly suffer from injuries related to computer use, and these injuries result in a third of all lost workdays (Jeffress, 1999).

Many companies are taking measures to boost computer ergonomic issue awareness for employees, and some states have passed laws to mandate ergonomic policies (Jeffress, 2000; Silverstein, 1997). Manufacturers of office furniture have also had to adjust distribution strategies to meet the new demands for ergonomically correct furniture and other office equipment (Sanders, 1998).

The physical setup of office workstations can lead to numerous problems associated with work-related injury. Research suggests that computer workstations must be properly planned and installed to prevent physical injuries (Figura, 1996; Sanders, 1998; Scheurermann et al., 1998; Workers-comp update, 1996). Prolonged use of computers can result in severe vision problems that can be prevented with workstation redesign (Gallagher, 1996; Sanders, 1998; Scheurermann et al., 1998).

It is vital that employers adopt policies to assess employee workstations to avoid injuries and improve productivity within the office (DiMatteo, 1996; Jeffress, 2000). Compaq, a leader in the field of computer technology, employs researchers to develop hardware and software to improve offices (Templin, 1996). Some companies have adopted workstation ergonomics programs, which include related products, workstation exercises, and time of computer use assessments (Cocheo, 1996).

Employers are beginning to hire ergonomists to assess workstation conditions and to develop improvements for the work environment (Jeffress, 2000; Spotlight, 1994). Such assessment goes beyond simply redesigning furniture. The ergonomist examines the overall workstation environment that contributes to poor working conditions that may result in worker injury and inadequate production (Jeffress, 2000).

Insurance companies have been actively involved in these issues due to worker claims filed against employers for work-related injuries from insufficient workstation design. Software packages have developed, which assist companies in establishing workstation assessment programs in an effort to reduce employee claims (Angus, 1997; Pasher, 1997).

Although it is clear that computer ergonomics is an issue in the workplace involving many different parties, the extent of computer workstation assessments for office professionals, who use computers daily, is not clear. This study will identify the assessments conducted at the office professional's computer workstation.

Need for the Study

The use of computers in the office professional's place of employment increased from 51 million users in 1993 to 64 million users in 1997 (Computer Use in the United States, 1999). As office professionals spend more time at the computer, it is likely that they will encounter a variety of problems related to computer use. Documenting the assessments of office professionals' computer workstations to alleviate or prevent problems will provide information for business employers and employees who are beginning this process. In addition, office trainers and educators will be able to discuss with students current trends in the computer workstation assessment area.

Statement of the Problem

Physical problems incurred as a result of computer use are serious issues in businesses, and therefore, computer workstation assessment should be ongoing. The problem of this study was: What are the incidences of professional assessments conducted at the office professionals' workstation?

To investigate this problem, a national group of members randomly selected from the International Association of Administrative Professionals database was surveyed to address these research questions:

1. What problems related to computer use are experienced by office professionals?
2. What professional assessments are conducted at the office professionals' computer workstation?
3. What computer workstation safety features were implemented?
4. What type of computer workstation evaluation follow-up was conducted?
5. Are there statistically significant differences between incidences of professional computer workstation assessments when company demographic variables are considered?

Methodology

A questionnaire was used to determine the computer assessment procedures used by office professionals. The questionnaire included four sections: (1) respondent information, (2) company demographics, (3) computer use information, and (4) professional workstation assessments, including implementation of safety features and follow-up evaluations.

Validity. A twelve-member panel of experts validated the content of the questionnaire. In addition to teaching computer and office education courses, these experts had published in the office and computer technology area. Changes were incorporated as deemed necessary to ensure the content covered the desired objectives.

Clarity. To determine clarity, a pilot test was administered to twenty randomly selected office employees. Again, changes in wording were incorporated as appropriate.

The initial mailing, which included a cover letter, the questionnaire, and a postage-paid envelope, was sent to 1,000 International Association of Administrative Professionals members. After a second mailing to nonrespondents, a response rate of 39.2 percent was obtained (N=392).

Data Analysis. Data were analyzed using descriptive statistics, including frequencies, percentages, and means as appropriate. Significance was tested using chi-square tests. The .05 level was used to determine statistical independence and differences.

Findings

Profile of Office Professional Respondents' Personal and Company Demographic Variables

Personal Demographics. The first analysis provided personal profiles of the 392 office professional respondents (Table 1). All respondents were female, and the majority were between the ages of 30 and 59 (86.6%). Over two-thirds had taken some college courses or held an associate's degree (46.9 and 20.9% respectively), and had been working in the office profession for 16 or more years (68.2%).

Table 1

Profile of Office Professional Respondents' Personal and Company Demographics

Demographic Variable	Frequency (N = 392)*	Percent
Personal Demographics		
Age		
20-29	27	7.0
30-39	98	25.3
40-49	150	38.8
50-59	87	22.5
60 +	25	6.5
Education		
High School	33	8.4
Certificate program	18	4.6
Some college courses	184	46.9
Associate's Degree	82	20.9
Bachelor's Degree	41	10.5
Master's Degree	8	2.0
Other	26	6.6
Years of Experience in Office Profession		
< 5	13	3.4
6-10	46	11.8
11-15	65	16.6
16-20	96	24.6
> 20	171	43.6

Company Demographics

Location of Company (Area Population)		
Rural (< 20,000)	59	15.3
Suburban (20 - 50,000)	102	26.4
City (> 50,000)	217	56.2
Age of Company (in Years)		
< 5		11
3.0		
6-10	18	4.8
11-20	38	10.2
21-40	58	15.6
40+	247	66.4
Number of Employees in Company		
1-10	21	5.5
11-20	14	3.6
21-50	17	4.4
51-100	116	30.2
101-5,000	138	35.6
Number of Office Professional Staff in Your Department		
1	111	29.1
2-5	194	50.8
6-10	35	9.2
11-20	26	6.8
> 20	16	4.2

*Some respondents elected not to answer the demographic questions.

Company Demographics. An analysis of the respondents' company profiles (Table 1) revealed that over half of the respondents' companies (56.2%) were located in city/metropolitan areas and had been in operation for 40 or more years (66.4%). In addition, over half of the respondents

(50.5%) indicated they worked for companies that had over 51 employees. Almost eighty percent of the respondents (79.9%) reported that they had 5 or less office support professionals in their company.

Computer Use and Problems Related to Computer Use Experienced by Office Professionals

Computer Use. Table 2 reveals that three-fourths of respondents (78.5%) had been using computers for 7 or more years. Also, three-fourths of the respondents (79.9%) used computers from 3 to 6 hours per day.

Problems Related to Computer Use. The main computer workstation-related use problems reported by respondents were physical problems such as neck fatigue, wrist pain and backaches, which had been experienced by over 72.8 percent. Visual problems such as blurring, eyestrain and vision related headaches were experienced by 57.3 percent, and stress-related problems such as tension and nervousness were experienced by 43.2 percent of the respondents.

Incidences of Professional Assessments of Office Professionals Computer Workstations

Of the 392 office professional respondents, less than one-fourth (24.2%) had a professional assessment of their computer workstation (Table 3). For those having professional assessments, main areas assessed were workstation furniture (91.6%), computer hardware features (75.8%), office environment (65.3%), and body measured to workstation (53.7%).

Respondents indicated that the top five reasons professional assessments were conducted were: (1) to prevent computer-related problems (48.4%), (2) to alleviate computer-related problems (47.4%), (3) to comply with ergonomic

Table 2

Computer Use and Problems Related to Computer Use Experienced by Office Professionals

Factor	Frequency (N = 392)	Percent
Computer Use		
How long (in years) have you been using personal computers?		
1-3	18	4.6
4-6	66	16.9
7-10	134	34.4
11 +	172	44.1
How many hours a day do you use a computer?		
< 3	28	7.2
3-4	121	31.3
5-6	188	48.6
7 +	50	12.9
Problems Related to Computer Use		
What problems have you experienced from computer use?*		
Physical problems	283	72.8
Vision problems	220	57.3
Stress-related problems	167	43.2

*More than one response could be selected.

standards (32.6%), (4) as a result of new office construction/redecoration (31.6%), and due to a total quality management decision (27.4%). Mainly in-house specialists (63.2%) or an outside consultant (18.9%) conducted the professional assessments. Less than one-half (44.2%) indicated that this was a company-wide assessment.

Table 3

Incidences of Professional Assessments of Office Professionals' Computer Workstations

Factor	Frequency (N = 392)	Percent
Have you had a ***professional*** assessment of your computer workstation to ensure that it fits your individual needs?		
Yes	95	24.2
No	297	75.8
If Yes, what was assessed?* (N = 95)		
Workstation furniture	87	91.6
Computer hardware features	72	75.8
Office environment	62	65.3
Body measured to workstation	51	53.7
Why was the professional assessment conducted?* (N = 95)		
To prevent computer-related problems	46	48.4
To alleviate computer-related problems	45	47.4
To comply with ergonomic standards	31	32.6
New office construction/ renovation	30	31.6
As a total quality management decision	26	27.4
Changed offices	19	20.0
Supervisor felt it was necessary	9	9.5
To comply with OSHA citations	8	8.4
It was suggested by architects/ interior designers	5	5.3
For insurance purposes	3	3.2
It was recommended by sales-people	2	2.1

Who conducted the professional assessment? (N=95)		
An in-house specialist	60	63.2
An outside consultant	18	18.9
Salesperson	7	7.4
Other	10	10.5
Was the professional assessment done company-wide? (N=95)		
Yes42	44.2	
No	53	55.8

*More than one response could be selected.

Implementation of Computer Workstation Safety Features

Table 4 indicates that as a result of the professional assessment, the majority of respondents (81.1%) reported that changes were made to their workstation. Nearly three-fourths of the respondents (74.0%) had their workstation furniture changed, and over half (54.5%) changed their personal habits. Computer hardware and office environment changes were made in 40.3% and 35.1% of the cases respectively. In approximately two-thirds of the cases (66.2%), the implementation of recommended changes alleviated computer-related use problems, mainly in the physical area (86.3%). In 84.2% of the cases, recommended changes were made.

Follow-up Evaluations of Computer Workstation Assessments

Follow-up evaluations of computer workstation assessments were made in less than one-third (27.4%) of the cases (Table 5). Respondents indicated they have a person to contact with questions in 89.5% of the cases, and 30.5% were notified of new workstation features and advancements.

Table 4

Implementation of Computer Workstation Safety Features

Factor	Frequency (N = 95)	Percent
As a result of the assessment, were changes made to your workstation?		
Yes	77	81.1
No	18	18.9
If Yes, in what area?* (N = 77)		
Workstation furniture	57	74.0
Personal habits	42	54.5
Computer hardware	31	40.3
Office environment	27	35.1
Did the implementation of recommended changes alleviate your computer-related problems? (N = 77)		
Yes	51	66.2
No	19	24.7
Was not experiencing problems	7	9.1
If Yes, in what area(s)?* (N = 51)		
Physical problems	44	86.3
Visual problems	17	33.3
Stress-related problems	0	0.0
Were any changes recommended that you did not make?		
Yes	15	15.8
No	80	84.2
If Yes, why not? (N = 15)		
Didn't feel they were necessary	5	33.3
Financially wasn't possible	5	33.3
Other	5	33.3

*More than one response could be selected.

Table 5

Follow-up Evaluations of Computer Workstation Assessments

Factor	Frequency (N = 95)	Percent
Has there been any follow-up evaluation of your workstation since the professional assessment and changes were made?		
Yes	26	27.4
No	69	72.6
If Yes, what form of follow-up?* (N=26)		
Personal visit	18	69.2
Phone calls	11	42.3
Survey	1	3.8
Other	1	3.8
Do you have a person to contact if you have questions concerning the setup of your workstation?		
Yes	85	89.5
No	10	10.5
Does the person/company who assessed your workstation notify you (through literature, etc.) of new workstation features and advancements?		
Yes	29	30.5
No	66	69.5

* More than one option could be selected

Differences Between Incidences of Professional Computer Workstation Assessments and Company Demographic Variables

The final analysis determined if there were any significant differences between incidences of professional computer workstation assessments and the company demographic variables. Table 6 shows that there was one statistically significant difference. Respondents who worked in companies that were 41 years or older had significantly more incidences of computer workstation assessments than those working in newer companies.

Conclusions

Research question one was asked to identify computer use and problems related to computer use as experienced by office professionals. The majority of respondents had been using computers for 7 or more years and were at their computer workstations from 3 to 6 hours per day. Since office professionals will use computers for a major part of their work day, it appears likely they will experience physical, visual, and stress-related problems as a result of that use.

Research question two investigated incidences of professional assessments of office professionals' computer workstations. Less than twenty-five percent of the respondents indicated that a professional assessment of their computer workstation had been conducted. It appears that professional assessments of computer workstations are not common practices in businesses.

Research question three and four addressed safety features implemented as a result of the professional assessment and follow-up activities conducted. The data revealed that implementation of workstation safety features did alleviate

Table 6

Differences Between and Incidences of Professional Assessments of the Office Professionals Computer Workstation and Company Demographic Variables

	Have you had a professional assessment of your computer workstation?				
Demographic Variable	**Yes (%)**	**No(%)**	**Chi-Square**	**df**	**p**
Business Location (population)					
Rural (< 20,000)	30.5	69.5			
Suburban (20 - 50,000)	40.0	88.2			
City (> 50,000)	23.5	76.5	1.48	2	.477
Age of Company (in years)					
< 20	14.9	85.1			
21-40	17.2	82.8			
41 +	29.6	70.4	8.22	2	.016*
Number of Employees In Your Company					
1-50	17.3	82.7			
51-100	19.8	80.2			
101-5,000	25.4	74.6			
5,001 +	33.3	66.7	6.20	3	.102
Number of Office Professional Staff In Your Department					
1	21.6	78.4			
2-5	25.3	74.7			
6 +	28.6	71.4	1.20	2	.547

*Significant at a .05 level.

computer problems. Although few follow-up evaluations were conducted, office professionals were provided with a contact person within the company for questions.

Research question five documented statistically significant differences between incidences of professional assessments and company demographic variables. The years a company has been in existence makes a difference in regard to incidences of professional assessments. Older companies tended to have professional assessments conducted of computer workstations for their office personnel.

Implications

The number of hours per workday office personnel spend at the computer workstation will result in computer-related use problems if workstations are not equipped and adjusted properly. It is evident that professional assessments of office personnels' computer workstations are a necessity. Employers should request professional assessments of computer workstations for all employees who are using computers. Office employees who are experiencing problems relating to computer use, or who are not sure if their workstation is ergonomically correct, should request a professional assessment. Educators at the secondary and postsecondary levels should stress to future office workers the importance of proper workstation habits and the need for workstations to fit individual needs.

Recommendations for Future Research

1. Future research should be conducted to document the types of computer workstation changes office personnel are making on their own initiative.
2. As this study focused only on office personnel, future research should be conducted to address other groups of computer end-users.

3. This study should be repeated in five years to determine if more attention is being given to professional assessments of computer workstations.

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TEACHING TEAMWORK: THE PAPER AIRPLANE CONTEST

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Abstract

This paper proposes an exercise in developing teamwork by constructing, flying, then measuring the distance flown and assessing the quality of design and decoration of paper airplanes. "The paper airplane contest" has the learning objectives of teaching group dynamics and decision processes by requiring participants to process rather than delegate tasks, to make a group decision regarding the placement of the "payload," and to see how their work is graded in the competitive "marketplace." As such, the authors believe that the exercise would be useful to educators and trainers alike in that it allows contest participants to experience and learn from a task which is in closer alignment to the tasks they can be expected to encounter in the workplace. Also, the trainer or educator can evaluate the results based on the airplane's performance just as workers' results are often evaluated based on increases in sales, changes in market share, product versatility, or some other type of performance in the marketplace.

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Group work is an organizational fact of life. Companies stress group activities to produce higher quality work products. Students who work well in groups may have significant advantages in job performance over those who do not. The question is, "How do business educators improve the group work skills of their students?"

Most educational activity is centered on individual exercises. Students read textbooks, take examinations and write papers. Occasionally, they form "study groups" which merely reify the process of reading textbooks, taking examinations and writing papers. Upon entering the workforce, however, students find that an entirely different set of skills is needed. They must work in teams, make decisions, *'get along'* with difficult personalities and find a way to achieve often conflicting and nebulous corporate objectives.

Once students become employees, their performance is rarely "graded" by the same type of pen and paper tests that they were subjected to in academia. This manuscript proposes that a "paper airplane exercise" allows for a closer 'test' of work behavior because it involves a *'hands on'* exercise. Further, decision making and working as a true team is fostered by the exercise, whereas traditional group exercises usually end in team members working *'separately together'* and synergy is lost. This exercise requires teammates to participate in the process instead of delegating and isolating the tasks. Finally, the exercise gives an opportunity for the teacher to evaluate work based on performance of a product rather than performance based on the usual term paper exercise which occasionally allows for 'free-riding' of less motivated employees.

While the paper airplane exercise does not address all of these concerns, it does provide a group activity with achievable objectives which may be more relevant to the kind of behaviors and objectives students will find in the workplace. The authors realize that this may sound counter-intuitive. How could something as silly as making paper airplanes accomplish useful, educational objectives? By enabling students to work in paired groups, by involving students in the construction of a work product, by enabling students to "test their product in the marketplace," and finally, by enabling the educator to reward or withhold rewards for good versus inferior work products, that's how. Is this not what work is all about? Is this not potentially more relevant than yet another multiple choice quiz on *Herzberg's Motivator Hygiene Theory* to name but one example?

The Paper Airplane Exercise - Directions for Teachers or Trainers

For this exercise trainers should ask participants to form groups of between four and eight trainees by teaming with others. (The instructor will determine if groups will be self-selected by letting participants choose their partner(s), or whether groups will be assigned to insure diversity in which case students count off the numbers "1, 2, 3, 4," etc. All 1's, then 2's then 3's then 4's will be directed to join groups.)

Terms Students Should Know Regarding Principles of Flight:

1. Resistance. This refers to the opposition that a column of air exerts upon an object which tries to pass through it.

2. Drag. Resistance and turbulence combine to produce drag. Smooth shapes yield less turbulence
(air fluctuations) and less drag. Bulky objects yield more turbulence and more drag. Engineers use wind tunnels with smoke to measure resistance and turbulence and modify their designs in order to minimize drag.

3. Thrust. Regular airplanes use large propellers or jet engines to provide thrust or forward directed force. Paper airplanes merely need the motion of your arm or the snap of a rubber

band. Thrust is applied in this case only at launching, which means resistance immediately slows momentum and gravity forces the plane down.

4. Lift and pressure. As a plane speeds up, air moves over the top of the wing at a higher velocity than the bottom of the wing creating reduced pressure underneath the wing. This in turn creates lift. In the case of an actual airplane, the top half of the wing is typically curved. When the air goes past the wing, the air flowing over the top part of the wing travels a farther distance than the air flowing under the bottom part of the wing. This action reduces the pressure above the wing relative to the pressure below the wing and the wing is forced upwards.

Summary. Four factors act upon a plane in flight. Thrust pushes it forward; resistance opposes it; drag slows it down; lift counteracts the pressure of gravity.

The Task

The trainer explains that each group's task is to make and decorate a paper airplane. The trainer suggests that each group decide among themselves what type of plane they will make and who will make the plane (or if each participant will make one plane then 'beta test' them and select the best one). Trainers should then assign team numbers and provide sheets of 8 ½ x 11 inch paper. Trainers direct teams to decorate their planes with an insignia. Teams must also put their team numbers on the plane in a place which is immediately noticeable so that the trainer can determine a winner. (Suggest that participants decorate their planes before folding them.) Trainers may also wish to suggest that teams consider appointing a "*design/decoration*" subcommittee among the more artistically inclined members of their group.

Round 1: Fly the plane.

The trainer or teacher may wish to give the following launching hints. "The plane should be launched firmly at a slight angle upwards. You may want to adjust (slightly) the angle of the wings. Thrown correctly, the plane may fly for as much as 30 feet."

Round 2: Add the payload.

In this round, the teacher explains that he or she has determined that a "payload" must be transported aboard each group's paper airplane. The payload shall consist of one paperclip which must be attached to each airplane. Participants must now discuss with their teammates where and how they believe that the paper clip should be attached in order to enable the plane to maximize flight distance.

Round 3. Design/Decoration

Airplanes may be judged by the instructor or by the other groups. Factors that may be considered include:

- In terms of the design, was the plane constructed in a manner that seemed to maximize the distance it could fly? Was the plane constructed in a manner enabling it to carry the paperclip payload?
- In terms of the decoration, is the plane pleasing to the eye? Does the decoration support an overall theme? Is the theme consistent with aeronautics?

Debriefing:

The teacher scores 1 point for each win and may decide to award partial credit (⅔ of a point and ⅓ of a point for second and third place finishes). The three contests include the following:

1. Plane distance flown.
2. Plane with payload distance flown.
3. Plane design/decoration.

The first 2 contests are objective tests with the winner chosen based on distance flown. The last contest is subjective and can be based on the assessment of the instructor or based on a vote from the class. Place the point totals in the following form.

The Paper Airplane Contest Scoring Sheet

Team #	Plane Distance	Plane Distance with Payload	Plane's Design/ Decoration	Total
Team 1				
Team 2				
Team 3				
Team 4				
Team 5				
Team 6				
Team 7				

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Questions for Discussion:

1. Who won the distance contest? Who won the payload contest? Who won the design/decoration contest? Who was the overall winner? Why?

2. How did the winning team decide to place their payload where they placed it? Was the decision a "team effort"?

3. How did the losing team(s) decide to place their payload(s) where they placed it? Was the decision a "team effort"?

4. What difficulties did you encounter working with your teammate? How did you overcome those difficulties?

5. Read the following:

The researcher Glen M. Parker in his book Team Players and Teamwork (1996) identified four different styles of players. He defined a "**contributor**" as "a task oriented team member who enjoys providing the team with good technical information and data, does his or her homework, and pushes the team to set high performance standards and use their resources wisely." A "**collaborator**" is described as, "a goal directed member who sees the vision, mission or goal of the team as paramount but is flexible and open to new ideas, is willing to pitch in and work outside his or her defined role, and is able to share the limelight with other team members." A "**communicator**" is "a process-oriented member who is an effective listener and facilitator of involvement, conflict resolution, consensus building, feedback, and the building of an informal, relaxed climate." Finally, a "**challenger**" is "a member who questions the goals, methods, and even the ethics of the team, is willing to disagree with the leader or higher authority, and encourages the team to take well-conceived risks" (Parker, 1996).

Which of these styles describes you? Why? Do you think that larger groups of 8 - 10 people need one of each?

Why? Can you compensate to help a group if it is lacking in two or three of the styles? How?

Summary and Conclusions

This paper has described a team building contest which uses the construction of a paper airplane to teach a number of skills. Participants not only take part in a fun and exciting "hands on" exercise, but may also be afforded the opportunity to assess their contribution to the team. In so doing participants may hone their team skills. Which participant worked as a collaborator? Who was the communicator? Did someone challenge the initial design? Who contributed most? The fact is that teamwork is "the cooperative effort of members of the group to achieve a common goal" (Berube, 1982). Perhaps by involving all four different styles of players, a cooperative effort will occur and, more importantly, a quality, 'winning' product will result.

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DEVELOPING NONTECHNICAL SKILLS OF INFORMATION TECHNOLOGY PROFESSIONALS TO MEET INDUSTRY NEEDS

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Abstract

Business requirements for employees in the information systems (IS) environment increasingly require nontechnical skills as well as the traditional technical skills that are commonly developed in educational environments. Frequently requested nontechnical or "soft" skills are team, communication, problem-solving, and self-initiative skills. This paper reports the findings of industry research regarding the desirability of nontechnical skills for employees in computer-based careers. Suggestions for the development of these skills are presented as well as evaluation techniques to assess the learning process and establish the credibility of soft skill instruction.

Information systems (IS) have become an integral part of society. These systems and the personnel responsible for them have permeated every facet of the organization and continue to increase in number. The Bureau of Labor Statistics (2001) predicts employment of computer engineers, analysts,

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support specialists, and programmers to increase by 194 percent from 1998 to 2006. As information systems have integrated throughout the organization, the nature of skills needed by an IS professional has broadened to include a variety of nontechnical competencies. Therefore, in order to prepare students to succeed in today's computerized environment, educators and trainers must use pedagogical approaches adapted to provide support for the nontechnical skill set as well as the technical.

The demands of industry at a time when IS employees are in short supply are discussed in this paper with suggestions for enriching the curriculum to assure that students are prepared for modern work environments. Educational programs frequently focus on the inclusion of the latest technological fads and the development of technical skills. All too often little or no attention is directed toward developing the ability to communicate effectively, work in a team environment, and apply knowledge to new problems in an assertive manner. Employees who have failed to develop skills other than mastery over current technological tools are much more likely to become technologically stagnated in an interactive social setting. This philosophy is not to imply in any way that technical skills are not important; rather it illustrates that "twin pillars."—one technical, one nontechnical—of an IS professional's talents must be evaluated and sought (Hoard, 1996).

Industry Requirements

Finding the right candidate for an IS position is not an easy task, as the following quote illustrates: "Unless you know a technically proficient genius with nerves of steel, the patience of a saint, and a degree in psychology, with some psychic abilities thrown in for good measure, finding someone who fits such a bill, or even a portion of it, isn't an easy task (Wallace, 1994)." Why is finding a qualified person so difficult? The answer may be that many educational programs do not integrate the development of technical and nontechnical skills. No doubt educational institutions across the nation are paying close attention to the technical aspect of the IS field, as rightly they should, but how many are addressing the "other" aspects that will make their students a highly sought commodity? At a time when there is a serious shortage of IS professionals, the vast majority of today's graduates will have little trouble finding a job. But how should educators adapt educational techniques to help students get the jobs they want and have the skill set necessary for career advancement?

The first step is to identify the specific skills industry desires in IS professionals. The literature identifies varying portfolios of skill sets, from technical competencies in programming languages, analysis and design, and telecommunication to nontechnical skills such as analytical ability and business-related soft skills. A synthesis of research by Nakayama and Sutcliffe (2001) indicated that employers want IS professionals who are more knowledgeable of their industry, have business acumen and management expertise, and possess human relations and behavior skills. According to Buhler (1997) nontechnical skills include team skills, flexibility, creating and managing change, creativity, strong interpersonal skills, conceptual skills, strategic management, role modeling, ethics, and continuous improvement. Cash (1996) identified 7 Cs of a well educated IS professional: communication skills, critical thinking, creativity, content, courage, candor, and commitment. Other researchers use additional descriptions of the desired nontechnical skill set, such as "emotional intelligence." Identified emotional intelligence traits include self-awareness, trust, attitude toward others, adaptability to ambiguous situations, self control, motivation, and other factors that impact productive and socially appropriate behavior (Abell, 2000; Barbian, 2001; Caudron, 1999; Nakayama and Sutcliffe, 2000; Tucker, Sojka, Barone, and McCarthy, 2000; Yost and Tucker, 2000). Overall recurring themes identified in the literature over the past decade include team skills, communication skills, and problem-solving abilities (Radding, 1997; Pitman, 1994).

Research was conducted among knowledge-based companies in Arkansas to validate employment needs of the information technology industry. The purpose was to identify the specific knowledge, skills, and abilities needed by IS graduates to be readily productive upon employment in industry. Results provided evidence of the need for a well rounded IS employee.

Data collection consisted of three stages: (1) site visits to interview key executives at selected companies; (2) focus groups to identify specific knowledge skills and abilities needed by IS employees; and (3) a web survey to rate value of skills and abilities identified. Corporate participants in the site visits and focus groups included the following organizations: Acxiom, Alltel, ArkSys, ESI Group, and Inacom. Sixteen information technology companies in Central Arkansas (324 responses) participated in the web survey, which was available for a two-week data collection period.

Analysis of site visit data—job descriptions, employment patterns, and web page job listings—resulted in the identification of eight job clusters: computer programmers, system/business analysts, computer engineers, database administrators, computer support specialists, network specialists, telecommunications analysts, and Internet specialists. While data were collected on technical and nontechnical knowledge skills and abilities for each job cluster, the focus of this paper is the findings relating to the most highly desired soft skills identified by the study: problem solving, listening, team work, adaptability, transferring knowledge, time management, visualization/conceptualization, and verbal communication. The collective ratings of the most highly desired soft skills of the 20 nontechnical skills evaluated across all eight job clusters are shown in Table 1. Eighty-seven percent or more of the industry respondents rated each of the eight top-ranked characteristics as either extremely important or very important.

These findings do not minimize the importance of technical competencies, which were also thoroughly investigated; rather, they emphasize the extreme importance of soft skills. The following statement illustrates the 21st century perspective of knowledge-based industry leaders:

> People with both technical skills and soft skills enjoy unlimited opportunities with the knowledge-based companies. Similarly, these companies offer people with substantial soft skills, but minimal technical skills, the same opportunities. Several firms, including Alltel and Acxiom, indicated that a place would be made for individuals who possess minimal technical skills but demonstrate initiative, leadership ability, and a willingness to learn and adapt. Rod Ford, President of ESI Group, suggested that [programs] be designed around the soft skills instead of technical skills (Teeter, Bailey, Faucett, Jovanovic, Walker, Cherepski, Hines, Tschumi, and Watson, 1999).

Uniform agreement existed among the participants interviewed for the current study that graduates who possess strong technical and strong soft skills are in the enviable position of being the most highly sought after and most highly compensated.

Nontechnical Skill Development

It is not the curriculum, per se, that needs revamping to address the nontechnical needs; rather, the nature and style of assignments and use of technology within the curriculum must

Table 1

Highly Desired Soft Skills for IT Professionals

Characteristics	EI*	VI	SI	NVI	NI
		(n = 324)			
Problem-solving process (problem identification, analysis, solving)	196	109	16	3	0
Listening	153	152	18	0	0
Team work (long term)	154	148	22	1	0
Adaptability to new technology, new languages	154	143	27	1	0
Transferring knowledge to application	115	179	29	1	0
Time management	128	162	33	2	0
Visualize/conceptualize	111	173	41	0	0
Verbal communication	111	171	41	1	0

*Key:
EI = Extremely Important
VI = Very Important
SI = Somewhat Important
NVI = Not Very Important
NI = Not at all Important

be reevaluated. In other words, the activities provided in the classroom need to include required components developing nontechnical skills, such as team, communication, problem-solving, and self-initiative skills (see PCBEE Statement No. 67, 2000). Like technical skills, students can only effectively develop their nontechnical skill set through repeated practice. The following is a suggested list of activities that can be incorporated into multiple classes in order to accomplish this goal. These activities have been evaluated by and, in some cases, developed with input from industry partners.

Team Skills

IS professionals are no longer loners interfacing only with their computers in a cubicle. They work in teams to accomplish goals that are too large for any one person to accomplish alone. Unfortunately, team skills do not come naturally for the average student and must be taught. The following list includes techniques that have proven beneficial in various classroom settings.

Include Team Activities Within the Scope of Each Class. Integrating team activities throughout the curriculum allows students to practice working with others to accomplish a common goal. Students must learn to self instruct. The IS environment is very team driven. Many students resist sharing responsibility for decision making and project completion-often top achievers fall within this category. Experimentation with team learning in its purest form is encouraged in the curriculum.

Provide Specific Instruction on Team Building. For team activities to result in the development of team skills, however, issues such as the following must be directly addressed: member selection, member bonding, goal selection, and conflict resolution. Incorporate these concepts throughout the curriculum. This content may then begin to impact behavior as it is applied in a realistic work situation. Group activities with behavioral goals established and a theoretical foundation in place will begin to develop team competencies within students. Conversely, assigning group activities with no instruction or developmental activities on team development may result in improved decision making, solely from multiple inputs from team members, but changes in student team behavior will not likely result.

Assign Case Studies That Require Teams to Delve into the Culture of Actual Organizations with Specific IS Needs and Develop Technical Solutions to Specific Problems. Working with a live scenario exposes students to issues that can be experienced only by interacting with actual end-users. Most problem solutions involve not only technical but also social/cultural aspects. Many educational institutions have service-learning programs through which instructors can obtain organizational contacts for case studies; Small Business Development Center clients are also excellent sources. Small businesses and nonprofit organizations often have many IS needs and may be understaffed with technologists. Students usually feel comfortable in these environments. Seek industry volunteers for enriching classroom experiences.

Require Accountability of Team Members. Team members must learn to be accountable individually and collectively. This aspect of work ethic is reinforced by emphasizing to students that even though the assignment is a group project, individual grades will differ based on peer evaluations. Peer evaluations must be a substantial component of the project grade. Use an evaluation technique that allows member anonymity and requires that different team members be assigned different ratings by a rater.

Three schemes that have been effectively utilized are as follows: (1) Each team member is given a certain number of points to allocate for team performance but is not allowed to give an equal number of points to each team member–one must be given the most points and another must be given the least. (2) Team members assign the percentage of the group grade they feel each team member deserves at the completion of the project. If a member participated to their satisfaction, he or she is assigned a 100 percent; if a specific member was never present and never contributed, a 0 percent is assigned. The highest rating (potentially assigned by the errant member) and the lowest rating (potentially caused by a personality conflict) are dropped and the remaining percentages averaged and multiplied by the group grade in order to arrive at the individual grade. (3) Allow a team member to "fire" a nonproductive team member. In order to receive a grade for the project, the terminated member must then convince another team to "hire" him or her.

Provide Students Experience Functioning in a Virtual Team Environment. Networking with colleagues at geographically diverse educational settings provides an effective opportunity to familiarize students with issues encountered when working with team members that they never see. Students learn to communicate in this type of environment in chat room facilities and/or discussion groups on the Internet. Numerous software packages are available for this purpose, and some servers are even preconfigured with chat/discussion capabilities. Students may also use e-mail, telephone, or fax to communicate. As long as the participating institutions are far enough apart that travel is impractical, students will have to rely on the technology. Providing a peer accountability grade component in this environment is also critical. Early experiments with this type of communication indicate that providing an initial "get acquainted" chat session is extremely valuable to the success of the team. Social interaction is limited in a distributed environment and must be encouraged. Team members who discover that they have something in common appear to work together as a more cohesive unit and have a more positive outlook on the process.

Consider Team-Based Assessment. In-class team performance assessment provides an additional incentive to work as a team to accomplish the team goal. However, caution should be exercised to ensure that all team members are making a valuable contribution.

Communication Skills

Communication skills are critical to the successful IS professional, who must communicate with management, end users, and other technical personnel. Listening, verbal, and written skills need to be refined in group and individual settings, on paper as well as using the newer forms of communication such as e-mail and web sites. The following is an initial set of development activities that can be incorporated into the program.

Require Written/Verbal Proposals, such as Requests for Proposals (RFPs), to be Graded for Communication Style and Clarity in Addition to Content. Students must realize that their credibility and the projected value of their work will be reflected in the quality of their communication, whether written or oral. Communication skills must be refined and evaluated in IS courses.

Require Verbal In-Class Presentations of Case Study Solutions Using PowerPoint, the Web, or Other Form of Computerized Presentation Technology, with a Requirement That All Team Members Speak in Front of the Class. In situations where the students have performed a case study at an actual client site or business, attendance at the presentation by a member or members of the "case in point" organization increases the sense of reality of the solution and, consequently, the team's performance.

Videotape In-Class Presentations. Provide students with the opportunity to view and critique their own presentations. Have them complete a written evaluation in which they list the top three to five strengths and weaknesses of their presentation with justification. Students need to see how their audience views them.

Schedule Mock Employment Interviews with Industry Partners. Providing students the opportunity to participate in a practice interview can be an effective way to illustrate the importance of (and practice using) their nontechnical skill set. Ask advisory board members if they will assist in the process. From the student's point of view, the interview is being conducted by a potential employer and is, therefore, more realistic. From the advisory member's point of view, the opportunity to develop relationships with potential employees is valuable. Have the interviewers identify the students' strengths and ways to capitalize on them.

Develop Mock System User Interviews to Develop Students' Listening Skills. Arrange mock interviews in which students must listen to and interpret a computer system user's description of a current system problem. Require that the students communicate and clarify with the user the understood specifics of the situation.

Provide an Avenue for Students to Electronically Post Their Resumes and/or Create Web Pages. In today's society, knowing how to communicate via the Internet is a valuable addition to an IS professional's skill set. Knowing that their resume and/or web page is accessible to the world encourages students to produce quality products. Having the students critique existing web pages for quality of communication issues such as clarity, understandability, and other communication components prior to creation of their own page is often beneficial.

Problem-Solving and Self-Initiative Skills

One of the most critical skills an IS professional must possess is problem-solving ability, yet the ability to independently find solutions to problems is the most difficult transition some students face when leaving the academic environment. No longer is an instructor available to tell them what to do when a problem arises. Suddenly they are on their own, and more is at stake than a grade. Often success in problem solving involves taking personal initiative to delve into issues and evaluate alternatives. This preparation for the reality of the work environment is challenging yet critical.

Engage Students' Cognitive Abilities. To facilitate development of students' thought processes, periodically generate problems for students to resolve. Provide opportunities for troubleshooting in which students must identify the problem, specify the cause and symptoms of the problem, and correct the situation. Thus students have the opportunity to apply their knowledge in new situations. For example, in a LAN administration class, "bugs" could be planted by altering user rights, changing network card configuration, pulling a cable loose, or deleting device driver files.

Provide Experiential Applications in Multiple Environments. Assist students in developing confidence in their judgment abilities by providing extensive opportunities to apply their knowledge and problem-solving skills in multiple environments. For example, in a LAN class have students work in groups to complete assigned installation and customization of file, print, and web servers on multiple platforms such as NetWare, Windows NT, and Linux.

Incorporate Case Study Discussions in Class. Include as many business case discussions in class as possible. Encourage discussions among the students rather than discussing directly from the text. The richness of drawing from different viewpoints and perspectives of the students is beneficial in developing thought processes.

Provide the Opportunity for Students to Learn to Function under Pressure. Design case-study competitions. During the event teams solve case-study problems and present solutions using technology. Awards should be presented based on innovation, content, and presentation.

Encourage an Atmosphere of Competition by Offering Bonus Points to Teams with the Superior Project. Allowing the class to vote on the best case presentation with bonus points as the prize increases the sense of competition, which for many students increases performance. Guide students in evaluating quality of team decisions—vision, cultural impact, technical specificity, and feasibility. Indirectly teach evaluative and critical-thinking skills during presentation wrap-ups.

Provide the Opportunity for Students to Shadow Industry Volunteers. Allowing students to follow an IS professional around on the job provides the opportunity to see a small subset of the issues that arise in a typical day. People skills, critical thinking opportunities, and conceptual thinking are often observed in addition to use of technical tools. Students have the opportunity to view and discuss the importance of problem-solving activities.

Importance of Assessment

Once in place, the innovative techniques and processes adopted to develop team, communication, problem-solving, and self-initiative skills must be assessed for effectiveness. Although valid assessment is an arduous process, it is essential in a skills-based program developing IS competencies. Formative assessment techniques must be used to evaluate ongoing student development of soft skills; summative assessment techniques must be used to evaluate student success in meeting program standards (PCBEE Statement No. 59, 1996). Students will take seriously the development of nontechnical skills if emphasis is placed on soft-skill assessment. These assessment results can be used by students in marketing themselves to employers.

Develop Program Goals and Standards Based on Industry Input

Information systems related curricula and/or standards have been developed by a number of professional and industry groups, such as the Association for Information Systems, Association for Information Technology Professionals, National Business Education Association, and the Organizational Systems Research Association. These resources should be combined with input from area and regional industry leaders in developing authentic program goals and standards. Input from student employers regarding post-graduate performance can identify nontechnical strengths and deficiencies which can establish benchmarks for program development and redesign.

Emphasize Nontechnical Skills When Assessing Projects

Consistently assessing only technical content discourages students from focusing on a well-rounded skill set. The selected approach to skill assessment is viewed by students as a reflection of the instructor's perceived value of the respective skills. Project evaluation should include a soft-skill component when possible.

Develop Application-Based Exams

Although much more difficult to develop, performance-based alternative assessment instruments measure higher level cognitive skills and can provide insight into students' soft skill set whereas traditional assessment instruments, such as multiple-choice and short-answer exams, tend to measure lower-level cognitive skills. Rather than using a short answer exam, require that students react to a scenario presented in a case. The students will have the opportunity to apply their knowledge and display their attitudes and character traits. In addition, completing **authentic** assessment activities such as the following allows students to apply both knowledge and soft skills in a realistic environment: troubleshooting hardware problems on a local area network, designing a technology plan for a small business, and revising a student organization's web page (see Zeliff and Schultz, 1998).

Use Advisory Committee Members as Outcomes-Based Assessment Resources

Organizations may have internal training techniques for developing nontechnical skills that they will gladly share. Invite employers who hire students to assist in assessing student portfolios for evidence of appropriate soft skill development.

Conclusion

In today's computer-based work environment, industry is seeking employees with a strong technical foundation and refined soft skills. The keys to developing students into these valuable resources are pedagogical innovation and academic-industry partnerships. A conscious paradigm shift must occur for education and training programs to move from developing pure technologists who work independently to developing cross-functional problem-solving teams that can address issues and communicate effectively with individuals possessing varying levels of technical expertise.

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CRITICAL THINKING AND THE BUSINESS WRITING COMPETENCIES OF JUNIOR ACCOUNTANTS

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Abstract

The purpose of this study was to compare the critical thinking requirements of business writing tasks with the business writing performance problem areas of entry-level accountants. The business writing problem areas of entry-level accountants tend to be the areas with higher critical thinking requirements. The categories of problem areas with the highest incidence of problems for entry-level accountants parallel the categories of highest critical thinking thresholds. The results of this study of 276 experienced accountants indicate that entry-level accountants have more difficulty with business writing tasks that involve audience focus and information density than with language control and organization.

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Critical thinking and communication skills have been a contemporary focus of educators and business professionals. Critical thinking is one of the foundation competencies outlined in a report from the Secretary's Commission on Achieving Necessary Skills (SCANS). The authors of the report define critical thinking as thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn and reason (U. S. Department of Labor, 1991). Thoma (1993) defined critical thinking as the ability to identify aspects of an issue and draw conclusions using appropriate methods of evaluation, and Halpern (1993) concluded that critical thinking is the skill to apply, analyze, synthesize, and evaluate information. Furthermore, written communication was the most important addition to accounting education in the 150-semester hour requirement to sit for the CPA examination (Novin & Tucker, 1993). Researchers have concluded that students are lacking skill in both areas.

An apparent decline in critical thinking skills (American Accounting Association [AAA], 1986; Clinton, 1987; "Perspectives," 1989; Sternberg, 1985a) parallels the current concern about deficient communication skills (Davison, Brown, & Davison, 1993). Over the years, the need for effective writing skills in the accounting profession has been well-documented (AAA, 1986; Accounting Education Change Commission [AECC], 1990; American Institute of Certified Public Accountants [AICPA], 1988; Kullberg, et al., 1989; Heimstra, Schmidt & Madison, 1990; Northey, 1990; Sanders, Czyzewski, & Moncada, 1996; Siegel & Sorensen, 1994). More recently, Moncada and Sanders (1999) reported that writing skills ranked fifth in importance by CPA firm recruiters when they prescreen candidates for a first interview. More recently, the 1999 Practice Analysis of Management Accounting survey identified communications skills (oral, written, and presentation) as being the most important KSA (knowledge, skills and abilities) for undergraduate accounting majors (Russell, Siegel, & Kulesza, 1999). Furthermore, management accountants report that they spend more time communicating with people today than they did five years ago.

Research results that identify particularly troublesome critical thinking/ communication areas for students generally, and accounting students specifically, are scarce. Research emphasis on the business aspects of writing rather than the analytical may have contributed to the scarcity of literature about critical thinking and business writing (Stallard, Price, & Smith, 1992).

Objectives of the Study

The purpose here was to provide some initial data about the relationship of critical thinking and the business writing ability of junior accountants. Specifically, the study served the following objectives:

1. To determine a relative level of critical thinking required in particular business writing tasks.

2. To determine the perceptions of experienced practicing accountants of the business writing performance of junior accountants under their supervision.

3. To compare the rank order of business writing problem areas of junior accountants as perceived by experienced practicing accountants with the rank order of critical thinking requirements of those same tasks.

4. To determine whether the comparison of rank orders or business writing problem areas with the critical thinking requirements of those problem areas might warrant further investigation of the role of critical thinking to business writing performance of entry-level accountants.

Procedures

The procedures employed in this study included development of two instruments, selection of appropriate respective population and/or sample, gathering data, and data analysis.

Instrument Development

Two instruments were needed to gather data about the critical thinking required in business writing tasks and the ability of junior accountants to complete those tasks. For the purposes of this study, these instruments will be referred to as the Assessment of Critical Thinking Requirements of Business Writing (ACTRBW) and the Business Writing Assessment of Junior Accountants (BWAJA).

Assessment of Critical Thinking Requirements of Business Writing (ACTRBW). The purpose of this instrument was to determine from accounting professors a relative ranking of critical thinking requirements of business writing tasks. The foundation of this instrument is the assessment instrument development by Rogers (1990) in which business writing tasks are grouped by four variables—audience focus, information density, organization, and language control. This assessment instrument was chosen because it is the result of extensive research by, and is the primary business writing assessment of, the MBA Writing Center of the College of Business at the University of Michigan. The instrument items in this instrument are based on the Rogers' instrument, and a likert-type scale was added to assess the degree of critical thinking required in the tasks. Three accounting professors reviewed the instrument for content validity and agreed that the instrument items represented business writing tasks required in accounting practice. The test/retest reliability of this instrument was .84 with a month between administrations to a group of six accounting professors.

Business Writing Assessment of Junior Accountants (BWAJA). The purpose of this instrument was to gather data from experienced practicing accountants about the perceptions of experienced practicing accountants of the business writing ability of junior accountants. The instrument items in the BWAJA were identical to those on the ACTRBW. The scale, however, was different. The likert-type scale represented the degree of competency perceived in the occupational performance of junior accountants under the supervision of the experienced practicing accountant who completed the instrument.

The reliability of the BWAJA was determined by test/retest correlation with a group of 10 accountants. One month lapsed between administrations. The correlation coefficient was .76.

Selection of Appropriate Respective Population and/or Sample

Accounting professors, with work experience in accounting, teaching advanced accounting courses likely are familiar with the business writing demands of accounting practice. Therefore, the ACTRBW was completed by professors of accounting.

Experienced practicing accountants who supervise junior accountants likely are familiar with the business writing performance of junior accountants. For the purposes of this study, experienced practicing accountant was defined as an accountant with a CPA and still employed in public practice. A junior accountant was defined as an accountant hired without accounting work experience and still in the first three years of employment in accounting.

Data Gathering

The ACTRBW was distributed to eight professors of accounting at three mid-western universities. These professors were selected based on their accounting work experience as well as the advanced nature of the accounting courses that they taught.

The BWAJA was distributed as a survey to 1500 accountants who belonged to a professional organization of certified public accountants. The instructions asked these accountants to complete the survey if they held CPAs, were still in practice, and supervised junior accountants who were in their first three years of accounting practice. The professional designation of CPA requires relevant work experience. The survey was returned by 276 respondents. That represents a modest return rate. That is understandable in that accountants are very busy professionals whose primary concern is accounting. The database from which the names of these accountants were obtained was commercial, and subsequent mailings were cost prohibitive. The researchers concluded that the voices of 276 CPAs warranted, given appropriate acknowledged limitations on generalizations, an audience despite the modest return rate.

Data Analysis

The data gathered through the ACTRBW represented the degree of critical thinking required in business writing tasks and was analyzed by determining averages based on the responses on the likert-type response scale. The scale was Requires a High level of Critical Thinking (5), Requires a Substantial Amount of Critical Thinking (4), Requires a Moderate Amount of Critical Thinking (3), Requires Some Critical Thinking (2), and Requires No Critical Thinking (1).

The data gathered through the TWAJA represented the perception of experienced practicing accountants of the business writing performance of junior accountants. The data was tabulated by likert-type response in terms of Always (5), Usually (4), Frequently (3), Sometimes (2), and Seldom (1). In the analysis, however, the number of categories obscured the positive and negative nature of the response pattern. Therefore, the positive categories (Always, Usually, and Frequently) were collapsed to represent a clear contrast to the collapsed negative responses (Sometimes and Seldom).

Findings

The results shown on Table 1 serve two purposes. First, the data on the table provides an initial sense of the relative critical thinking required of instrument items, in terms of averages, as perceived by accounting professors. Second, the table shows a comparable ranking of business writing performance problem areas perceived in the work of entry-level accountants by experienced and practicing accountants. Three of the top five questionnaire items in terms of critical thinking requirements (provides supported conclusions, adapts written messages to appropriate audiences, and adapts arguments to audience) were also in the top five in terms of business writing performance problem areas. Over 50 percent of items were within 2 rank order intervals on the two scales. Furthermore, two-thirds of the bottom fifteen items were common to both scales. Although this is a comparison of critical thinking requirements of business writing tasks and performance problem area in those tasks, a relationship between the degree of critical +thinking required and performance difficulty of entry-level accountants is apparent.

A similar relationship exists in the categories of measures. For example, the top in rank order in terms of critical thinking and business writing problem areas were instrument items relating to Audience Focus and Information Density.

Consistently, eleven of the bottom 15 items on both scales were from the Organization and Language Control areas. Again, although a comparison of critical thinking requirements of business writing tasks to performance problem areas in those tasks, Audience Focus and Information Density are problem areas for entry-level accountants and have higher critical thinking requirements.

Table 2 presents the responses of experienced and practicing accountants concerning the business writing performance of entry-level accountants according to the four measures, indexed by descending average. The table includes two columns that summarize the data according to AUF and SS levels of performance. As indicated earlier, the number of categories obscured the positive and negative nature of the response pattern. Therefore, the positive categories (Always, Usually, and Frequently) were collapsed to represent a clear contrast to the collapsed negative responses (Sometimes and Seldom). The AUF column indicates the percentage sum of the Always, Usually, and Frequently columns. The SS column reflects Sometimes and Seldomly percentage sums column.

Audience Focus

The first section of Table 2 presents results from the summary statement and the specific statements about the frequency with which entry-level accountants employ audience focus in their professional writing. Approximately 7 in 10 participating accountants assessed the frequency with which entry-level accountants adapt written messages to appropriate audiences as Sometimes or Seldomly employed. The mean for the category did not even reach the midpoint on the 5-point scale. Results for adapting arguments to audience were similar. Nearly 6 in 10 participating accountants assessed entry-level accountants as only Sometimes or Seldomly addressing audience concerns.

Table 1

Relative *Ranking* of Critical Thinking Requirements and Business Writing Performance Problem Areas

Category Instrument		Critical Thinking ACTRBW**		Problem Areas BWAJA***	
Item	Measure*	Rank Order	Faculty Ave	Rank	CPA Ave
Provides Supported Conclusions	ID	1	4.0	1	2.09
Provides Appropriate Amount of Information	ID	12	3.2	2	2.15
Adapts Written Message to Appropriate Audiences	AF	5	3.7	3	2.23
Adapts Arguments to Audience	AF	4	3.7	4	2.26
Uses Persuasive Techniques Where Appropriate	LC	7	3.6	6	2.36
Organizes Written Ideas Appropriately	Org	13	3.2	6	2.37
Achieves Logical Focus and Flow	Org	3	3.8	7	2.42
Addresses Audience Concerns	AF	10	3.3	8	2.44
Uses Appropriate Logic Pattern	Org	2	3.9	9	2.54
Proofreads Accurately	LC	23	2.8	10	2.55
Achieves Coherence	Org	8	3.6	11	2.56
Uses Topic Sentences	LC	28	2.6	12	2.56
States a Clear Purpose	Org	15	3.2	13	2.57
Provides Relevant Content	ID	16	3.1	14	2.62
Uses Tact and Diplomacy	LC	14	3.2	15	2.62
Provides Appropriate Detail	ID	3.211		16	2.64
Uses Apparent Logic Pattern	LC	18	3.4	17	2.64
Adapts Tone to Purpose	LC	19	2.9	18	2.64
Applies Grammar and Language Fundamentals	LC	21	2.7	19	2.66
Avoids Digressions	Org	20	2.7	20	2.68
Includes an Introduction Where Appropriate	Org	25	2.5	21	2.78
Maintains Objectivity	LC	9	3.3	22	2.80
Uses Appropriate Format	Org	24	2.5	23	2.82
Provides Suitable Tone	LC	22	2.8	24	2.82
Includes a Conclusion Where Appropriate	Org	18	2.9	25	2.86
Avoids Gender Bias	AF	17	3.1	26	2.98
Uses Appropriate Level of Formality	LC	27	2.5	27	3.00

*AF = Audience Focus, ID = Information Density, Org = Organization, LC = Language Control.

**5 Point Scale - Requires a High level of Critical Thinking (5), Requires a Substantial Amount of Critical Thinking (4), Requires a Moderate Amount of Critical Thinking (3), Requires Some Critical Thinking (2), and Requires No Critical Thinking (1).

***5 Point Scale - Always (5), Usually (4), Frequently (3), Sometimes (2), and Seldom (1).

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Table 2

BWAJA Response Pattern of Experienced Accountants By Descending Average Per Measure

Item	Always Usually Frequently (A·U·F) %	Sometimes Seldom (S·S) %	Average**
Audience Focus			
Avoids Gender Bias	64	36	2.96
Addresses Audience Concerns	44	57	2.44
Adapts Arguments to Audience	29	71	2.28
*Adapts Written Message to Appropriate Audiences	27	73	2.23
Column Mean	41	59	2.47
Information Density			
Provides Appropriate Detail	57	43	2.64
Provides Relevant Content	55	45	2.62
* Provides Appropriate Amount of Information	54	46	2.16
Provides Supported Conclusions	52	48	2.09
Column Mean	54	46	2.38
Organization			
Includes a Conclusion Where Appropriate	66	35	2.85
Uses Appropriate Format	66	34	2.82
Includes an Introduction Where Appropriate	58	42	2.78
Avoids Digressions	52	48	2.68
Uses Apparent Logic Pattern	55	45	2.64
States a Clear Purpose	50	50	2.57
Achieves Coherence	47	53	2.56
Uses Topic Sentences	51	49	2.56
Uses Appropriate Logic Pattern	50	50	2.54
Achieves Logical Focus and Flow	42	58	2.42
*Organizes Written Ideas Appropriately	38	62	2.37
Column Mean	51	48	2.62
Language Control			
Uses Appropriate Level of Formality	73	27	3.00
Provides Suitable Tone	63	37	2.82
Maintains Objectivity	68	32	2.80
*Applies Grammar and Language Fundamentals	55	45	2.66
Adapts Tone to Purpose	56	44	2.64
Uses Tact and Diplomacy	53	47	2.62
Proofreads Accurately	45	55	2.55
Uses Persuasive Techniques Where Appropriate	40	61	2.36
Column Mean	56	44	2.68

*Summary Statement.

**5 Point Scale - Always (5), Usually (4), Frequently (3), Sometimes (2), and Seldom (1).

The only statement that experienced accountants rated AUF as exceeding SS concerned avoiding gender bias. The column mean for Audience Focus, however, indicated that SS exceeded AUF by 18 percent.

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Information Density

Similarly, the responses indicate a problem in the second section of Table 2, Information Density. The mean of the average for Information Density was only 2.38. None of the section items reached 60 percent AUF. Two items, "provides appropriate amount of information" (2.15) and "provides supported conclusions" (2.09), were particularly low.

Organization

Organization, contained in the third section of Table 2, received the highest mean average (2.62), although that average was only slightly beyond the midpoint of the 5-point scale, and produced only a three-point spread between AUF and SS. Two of the items, "achieves logical focus and flow" (2.42) and "organized written ideas appropriately" (2.37) did not even reach the midpoint.

Language Control

As with Organization, the mean for Language Control, the final section of Table 2, was only slightly higher than the midpoint. One item, "uses persuasive techniques where appropriate," reached only an average of 2.36.

Discussion

The business writing problem areas for entry-level accountants as perceived by experienced and practicing accountants may relate to the degree of critical thinking required to demonstrate skill. Furthermore, Audience Focus and Information Density, as measures of business writing skill, may be problems for entry-level accountants because they have stronger critical thinking requirements.

Furthermore, traditional undergraduate business writing courses that focus on Organization and Language Control may not be adequate for the preparation of entry-level accountants. Initial employment in this field may require business writing courses that more strongly address critical thinking about Audience Focus and Information Density.

This feedback from experienced accountants about the business writing skills of entry-level accountants using Rogers' four measures indicates generalized dissatisfaction with these skill areas. The column average range of 2.38 - 2.68 on a 5-point indicates dissatisfaction in each of the measures--Audience Focus, Information Density, Organization, and Language Control.

Structural and strategic characteristics, despite this narrow range in column averages, may play a role in identifying problem areas. For example, the two measures that may be more structural than strategic, Organization and Language Control, had the two highest column averages and were the only two to surpass the midpoint. Learning and application instruction in those categories may stress basic structure rules, templates, and guidelines. Experienced accountants, however, indicated that even in the Organization measure that had the highest column average (2.68), the perception of the instrument item as being AUF as opposed to SS was about equal in such basics as stating a clear purpose, using topic sentences, and using an appropriate logic pattern. Actually, the range between the column means for AUF and SS for the entire section was the narrowest, 3 percent, of the four measures.

The categories with the lowest column averages conversely were the two, Information Density and Audience Focus, that most closely relate to specific context strategy. Determining the appropriate density of information and focusing the writing on the target audience may require a higher degree of critical thinking than does organizing or exercising language control.

The critical thinking factor also may relate to the two categories that may be more structural, Organization and Language Control. For example, in the Organization section. "achieves logical focus and flow" that requires critical thinking had a strong SS percentage (58) and a relatively low average (2.42) while "uses appropriate format," that requires less critical thinking had a strong AUF (66) and a relatively high average (2.82). "Uses persuasive techniques where appropriate" that requires a high degree of critical thinking had a high SS percent (61) and a low average (2.36), whereas the less demanding "uses appropriate level of formality" had a high AUF percentage (73) and a high average (3.00).

Effectiveness in structural attributes also may exist between categories. For example, in the Organization measure 65 percent of experienced accountants indicated that junior accountants always, usually, or frequently include conclusions. Under Information Density where the conclusions required support, however, the AUF percentage dropped by 11 percent.

Data Summary Statements

Each set of the four measures contained summary items. Those items, with the exception of Language Control, were some of the lowest items in the respective categories. For example, the summary statement for Audience Focus, "adapts written messages to the appropriate audience" received a 73 percent SS response and an average (2.33), far below the measure's average of 2.47. In Information Density the summary statement "provides appropriate amount of information" had an average of 2.15 while the category average was 2.38. The summary statement for Organization, "organizes written ideas appropriately" had the highest (62) SS percent and the lowest average of the entire category (2.37). The summary statement phenomenon may indicate that respondents had a generally negative reaction to the respective measures but that the instrument items did not capture a cause. Respondents also may not have been able to identify what contributes to the lack of ability in the respective measures, but that they perceived entry-level accountants as performing poorly according to the measures.

The range of average column means (49 percent – 54 percent) of the four measures as a percent of the top of the scale (5) hovered around 50 percent. This may indicate the extent of the proficiency problem in the business writing skills of entry-level accountants within the experience of this sample of experienced accountants. Considering that many of these entry-level level accountants probably took at least a basic course in business writing, faculty responsible for such courses may need to revise the curriculum to meet the needs of entry-level accountants.

The instrument items in the problem area categories, listed in ascending order of average in Table 1, highlight the areas of most negative perceptions of experienced accountants. The eight items that did not reach the midpoint illustrate the need to emphasize critical thinking skills in basic business writing courses, particularly in determining the appropriate information density and the audience focus of written documents.

Conclusions

The findings of this study are tempered by a modest return rate. However, results do suggest that:

1. The problem areas that experienced accountants identified in the writing of entry-level accountants largely parallel the threshold of critical thinking required in those problem areas. For example, determining how to support

conclusions requires a relatively high threshold of critical thinking ability, and the inability to support conclusions is a primary problem area for entry-level accountants. Seventy percent of the top 10 problem areas identified by senior accountants were in the top 10 areas requiring high levels of critical thinking.

2. Junior accountants are not meeting the business writing expectations of senior accountants. The summary statements in the categories of problem areas were more negative than the individual instrument items. While perhaps unable to identify specific problems, senior accountants surveyed in this study reflect substantial dissatisfaction with the business writing ability of recent graduates.

3. Audience focus and information density are primary problem areas for entry-level accountants in their professional writing. These areas also require higher thresholds of critical thinking.

4. Business writing as strategy rather than as structure may provide a more appropriate curriculum focus for the basic business writing course in exercising the critical thinking of students.

Teaching Implications

The content of the business writing course, particularly in relation to assignments, requires examination. An appropriate focus may be the critical thinking laden areas of Audience Focus and Information Density. Much of the content of the basic business writing course addresses discrete topics rather than developmental progression of writing.

Instructors can structure assignments using the following techniques to counteract the disjointed nature of the course and to aid the development of critical thinking and business writing skills (Catanach & Golen, 1996; Knight, 1992; Sternberg, 1985b):

1. Structure assignments developmentally within and among the topics by providing simple to complex content and tasks.

2. Provide assignments which require the students to ask questions of the instructor.

3. Include extensive context in the assignments to force questions and class discussion and to emphasize the social-interactive concept of writing.

4. Provide extensive feedback to students.

Instructors can further aid the development of critical thinking and business writing skills by assigning case analysis that requires critical thinking, particularly about situations that highlight Audience Focus and Information Density issues. Working closely in "Writing Across the Curriculum" initiatives with accounting faculty may encourage critical thinking challenges for students in written situational analysis.

Accounting practitioners surveyed in this study echo earlier research results outlining deficient business writing skills. However, by recognizing the connective nature of critical thinking and business writing and by making adjustments in assignments, instructors have an opportunity to aid the students' total intellectual development.

Need for Further Research

The importance of on-the-job business writing performance of newly graduated business employees is a critical factor for the credibility of curriculum and instruction in business writing. Further study of the relationship between the critical thinking threshold of performance criteria in business writing and performance, with a substantial response rate, may facilitate understanding of performance issues.

The professional literature requires expansion, particularly in terms of critical thinking, in field-based research of the business writing requirements and performance of initial business employees. Needs analysis of entry-level business professionals may represent the foundation for curriculum preparation and revision in critical thinking in business writing.

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